

# Wash Select II<sup>®</sup> and Wash Select II<sup>®</sup> POS

## Installation Manual

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# WASH SELECT II® INSTALLATION MANUAL

This manual provides comprehensive operational procedures for the Wash Select II. In this manual, we will discuss the setup, operation and maintenance of the Wash Select II.

If further assistance is needed, please contact the distributor from which the product was purchased.

When calling for assistance, you must have the following information available:

Wash Select II Serial Number: \_\_\_\_\_

Distributor Name: \_\_\_\_\_

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# 1 Site Planning

The Wash Select II is a self-serve unattended automatic car wash entry system designed specifically for the self-serve car wash market. The Wash Select II accepts various forms of payment, interacts with customers at the car wash entrance, and arms the car wash.

It is important to consider a few points prior to the actual installation of the Wash Select II unit. Among these considerations are the correct running of electrical conduit, and the proper positioning of all of the carwash machines. In this section, these issues will be discussed in detail. When proper planning is implemented, the Wash Select II installation will go smoothly, and the unit will operate reliably.

## 1.1 Electrical Planning

### 1.1.1 Site Grounding Considerations:

Make sure that the protective earth ground wire does not carry any motor return current. Only the neutral wire should carry return current.

### 1.1.2 Electrical Requirements of the Wash Select II

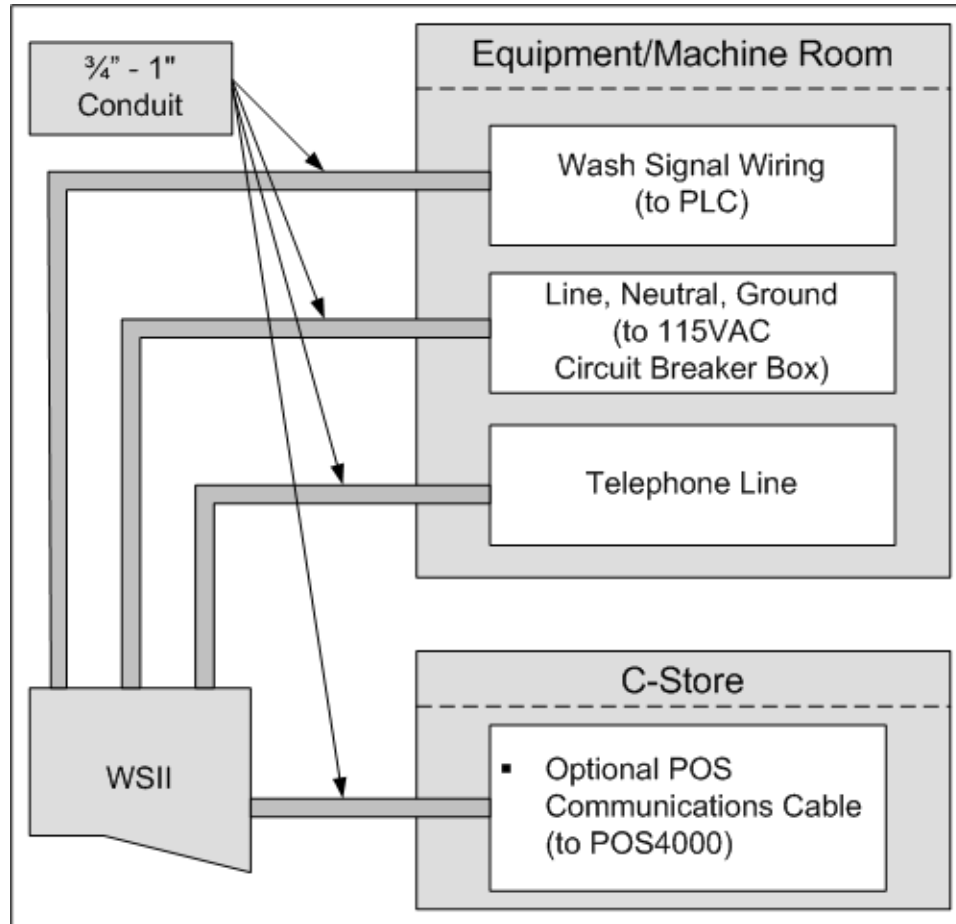
The Wash Select II will need to have 115-120 VAC on a 5-Amp dedicated breaker, which should be provided during wash construction. Most installers will have power supplied directly from one of the three phases used to power the wash motors and controllers. If this method is used, special attention should be given to proper earth grounding at the unit, as well as in the breaker panel.

Generally, most car wash manufacturers use a five-wire system to provide the arming signals for the selected wash packages. This means that one common line and four arming input wires are fed from the car wash's Programmable Logic Controller (PLC) to the Wash Select II unit. In addition to these five, a Wash-In-Use Hot and Wash-In-Use Neutral are required to reset the wash electronics. Typically, these are also provided by the PLC. It is important to consider this fact when planning the conduit runs, because there will need to be 2 separate runs from the wash to the Wash Select II—one for AC power, and one for PLC Control Wires & Optional Phone connection. If you are connecting to a POS4000 then you should have an additional conduit run to the POS4000 (C-store), unless you have the RF option.

Another important point to remember is that the Wash Select II is equipped to accept credit cards, so a separate run may be required from the nearest phone jack to the main conduit run. There is no guarantee that a credit upgrade will not be performed, so the installer should think ahead and make provisions. If there is an undedicated phone line nearby, then every attempt should be made to try to route the conduit so that access is easily gained to it. For example, a junction box can be placed in the run at that particular point.

If an undedicated telephone line is not nearby, try to route the conduit so that one is accessible at a later date. An important rule to remember is that the telephone cable should

not be run in the same conduit as the main power lines. Telephone, as well as intercom connections, can be run in the POS4000 connection conduit (Wash Select II POS system) if you are connecting to a POS4000 in a C-store.



**Figure 1. Conduits with Modem Line Layout**



For Internet credit clearing, Kwik Trip, or WashPay integration, Ethernet cable will be needed. This cable should be standard CAT 5 or CAT 6. This cable can be pulled through the existing POS4000 communications conduit run from the C-Store to the Wash Select II. The cable **CANNOT** be longer than 295 feet. The cable should extend at least 2 feet into the WSII and be run into the back office of the store/office to the frame switch or router.

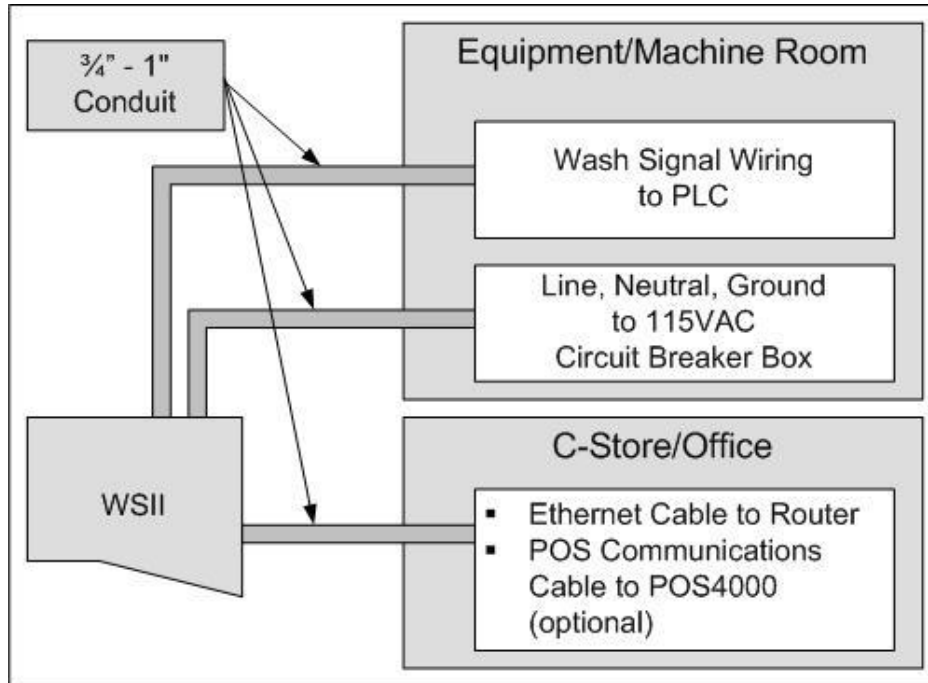


Figure 2. Conduits with Ethernet Cable Layout



**Important:**

DO NOT RUN CABLE OUTSIDE OF A CONDUIT!  
Follow all local and National Electric Codes.

Finally, it should be understood that the Wash Select II unit is to be powered by wires of at least 16 AWG, or larger. Failure to adhere to this recommendation could result in a fire or injury. When installing the conduit, it is suggested that it be a minimum of 3/4" in size, and be made of metal versus PVC.

## 1.2 Mechanical Planning

### 1.2.1 Position of the Unit

The proper positioning of the Wash Select II unit is very important. Figure 2 of this section should be used as a reference for good layout practices. There are several layout considerations that follow, which may be a good idea to think about. They are meant for suggestion only, and are not permission to circumvent wash manufacturer guidelines.

The Wash Select II unit should be placed 10-14 feet from the car wash entrance to ensure the proper timing and flow of customers. The wash's treadle switch should be centered along the horizontal plane, approximately 18" inches out from the front of the Wash Select II unit. Note that the Wash Select II unit extends 6" out from the leading edge of the optional straight base and even more for an angled base (refer to angled base dimensions). This will ensure that the car/truck's wheel is aligned with the treadle switch, as shown in Figure 2. Finally, a concrete post can be positioned just to the front and left corner of the unit, to act as a protective buffer. A typical size for this post is between 30 and 35 inches.

### 1.2.2 Mechanical Requirements

It is strongly recommended that the unit be surrounded with a brick or concrete housing for maximum security. However, since this may not be realistic in some installations, mounting it on a concrete slab will suffice.

This manual assumes that the optional base will be installed simultaneously with the unit. In this case, the concrete should be a minimum of 5" inches thick, 21" inches wide, and 13" inches long (Refer to Figure 2). The dimensions and positioning of the mounting holes for the base will be covered in the "Mechanical Installation" section of this manual.

The front edge of the standard base should be 18 inches from the driver's side tire centerline. (For angled bases, this distance should be 38.5 inches.) This provides the appropriate distance for customers to comfortably reach the unit to make their selections.

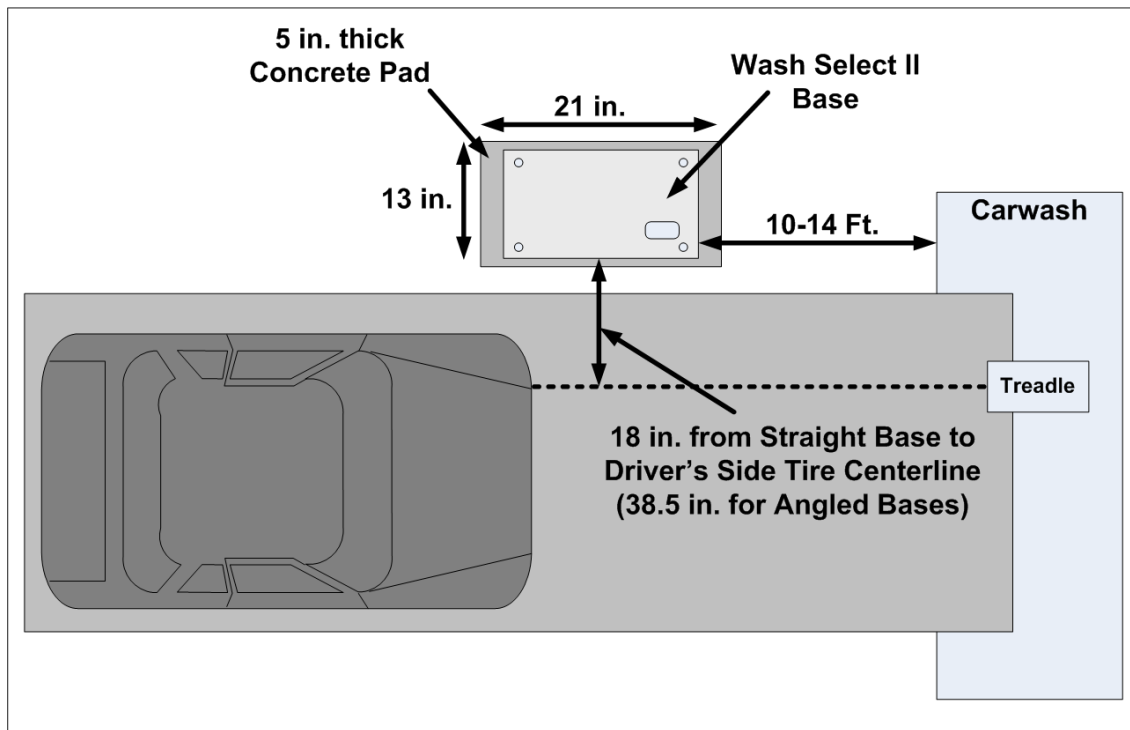


Figure 3. Wash Select II Base Placement

## 1.3 Miscellaneous Planning

### 1.3.1 Precautionary Considerations

A large percentage of sites contain "Floor Heat". Floor heat is an under-concrete heat exchanger system, consisting of an elaborate network of plumbing, through which anti-freeze circulates. In many cases this plumbing can run beside, under, or over conduit. Before marking and drilling into any area, the site floor heat diagrams should be reviewed, and the appropriate action taken to prevent any damage.

### 1.3.2 Unpacking & Checking Parts



**Note:** If any parts are missing, please call Unitec Technical Services at 1-443-561-1200.

Open each of the shipping boxes and ensure the following items are present:

#### 1.3.2.1 Wash Select II – Standard Installation

- Wash Select II Main Case Assembly
- Allen Wrench For Door

- Installation & Operation Manuals
- Keys & Lock core set
- (4) Bolts to secure top assembly to optional base
- (4) Washers to be used on bolts for optional base

### **1.3.3 Wash Select II – Option Packages**

The following items should be added to the standard installation checklist, if that specific option was purchased with it.

#### **WASH SELECT II - CREDIT OPTION**

- Extra Roll of Thermal Printer Paper
- IPTran credit modem

#### **WASH SELECT II - SPEECH OPTION**

- Microphone (for message recording)

#### **WASH SELECT II PROXIMITY SWITCH OPTION**

- Infrared Relay Block (installed on Wash Select II power supply cover)

#### **WASH SELECT II - OPTIONAL BASE**

- Base
- (4) Concrete Anchor Bolts
- (4) Washers
- (4) Nuts

#### **WASH SELECT II - WASHPAY INTEGRATION**

- CAT5E Ethernet Cable
- Expansion board

## 2 Tools Required for Installation

### 2.1 Mechanical Installation Tools

It is highly recommended that the Wash Select II be bricked in! All attempts should be made to achieve that end. It is ultimately the responsibility of individual distributors to make this decision, and if the decision is made that it will not be possible, Unitec offers an optional base at an affordable price. The following tools are recommended for the typical mechanical installation of this Wash Select II unit and optional base:

- 6" inch or longer ratchet extension (for optional straight base)
- ¾" inch deep well socket and socket wrench
- Open end 9/16" inch wrench
- Small, thin blade, flat-tip screwdriver
- Hammer drill
- ½" Concrete hammer drill bit
- Hammer
- Dual-plane Level
- 50' foot tape measure


### 2.2 Electrical Installation Tools

In addition to the mechanical assembling of the Wash Select II unit to the base (and the entire package to the concrete), there will be a number of electrical connections, which must be made. These connections will require the use of the following common electrical tools:

- Small, thin tipped, straight screwdriver (1/8" tip, for green Phoenix connectors)
- Wire strippers (capable of handling 10-22 AWG wire)
- Cable or wire tie wraps
- Diagonal cutters
- Needle nose pliers
- Telephone wire crimping tool and 4-pin, RJ11 / 14 modular plugs (for modem, if present) Radio Shack Part # 279-384



### 3 Mechanical Installation



**Note:** Unitec recommends the bricking in of the WSII when installed on property that is not manned or is not in plain sight of station or business personnel.

Unitec also recommends the connection of the WSII to a monitored security system in these situations or any situation where vandalism or theft may occur.

The use of the included door sensor and a customer supplied shock sensor mounted on the door is recommended as well.

#### 3.1 Bricking in the Wash Select II

For optimum security the Wash Select II unit should be mounted on a concrete slab and bricked in.

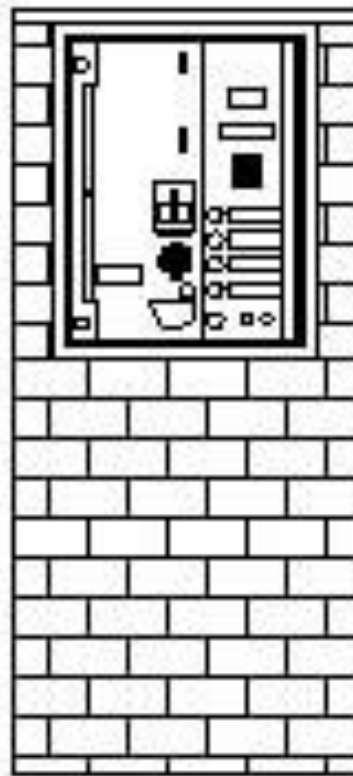
Tips on Bricking in:

- Conduit openings are at the right side of the bottom of the case.
- Bolt holes are at the bottom of the case to secure to the concrete slab.
- The concrete slab should be built so that the bottom of the Wash Select II™ case is 32.5” from the floor.

Outer dimensions of the Wash Select II are:

	Including reinforcing band along front edge	Not including reinforcing band around front edge
Tall	23.62”	23.24”
Wide	18.11”	17.74”
Deep	19.26”	19.25”

The following drawing shows such an installation:



**Figure 4. Wash Select II Installation**



**Hint:**

Most installers may need to increase the protection and organization of the wires that run from the conduit to the bottom of the Wash Select II main cabinet. Flexible conduit can be used to perform this function. The connectors can be attached to the metal conduit by way of PVC cement.

## **3.2 Installation of the Optional Base**

This document outlines the installation of the optional base.

### **3.2.1 Preliminary Consideration**

The Wash Select II base comes in two distinct styles, straight and angled. The following procedures are applicable to the straight base only. Refer to the documentation you received with the angled base (MN1001 Angled Base Addendum) for installation procedures for the angled base.



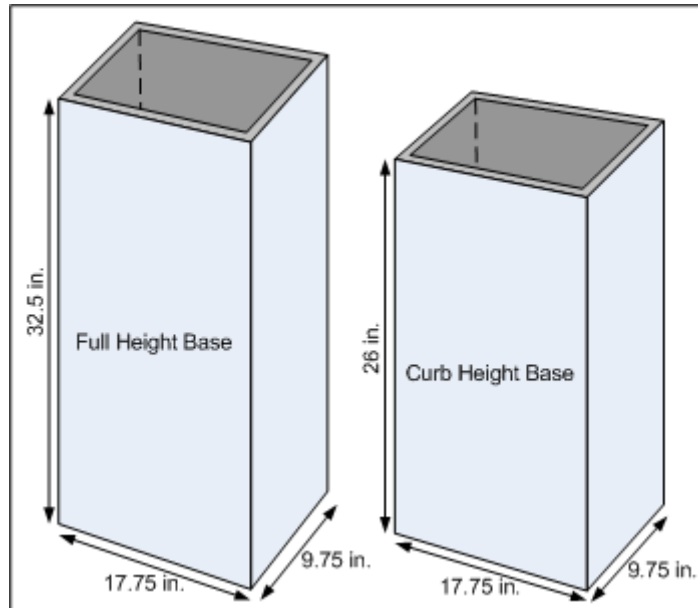


Figure 5. Straight Base

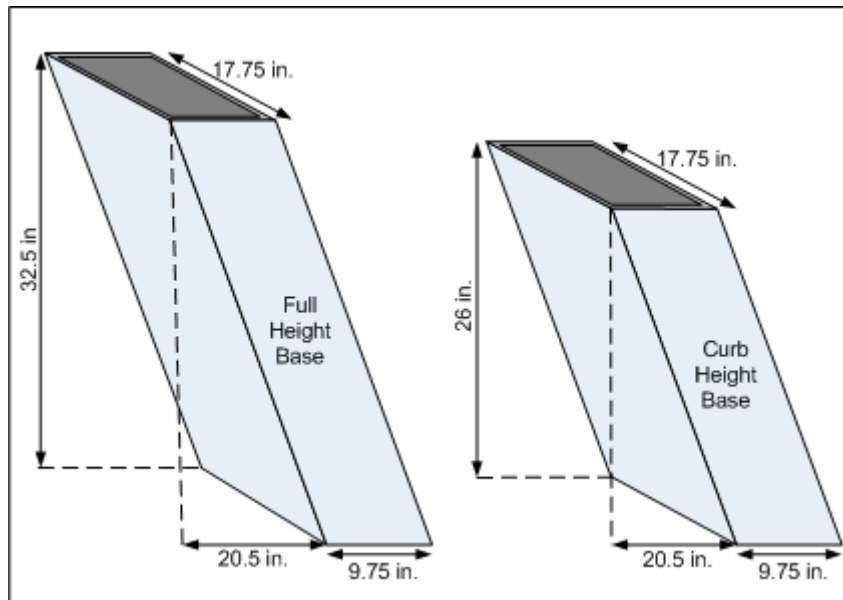


Figure 6. Angled Base

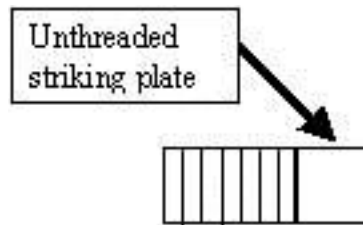
1. Mark the 4 holes that you intend to drill in order to mount the Wash Select II optional base. Mark the holes with a marker as the base is sitting on top of the concrete. It is important to keep in mind that the conduit run will need to protrude through the large opening in the lower right corner, at least 3 inches.



**Warning:**

DO NOT BEGIN MOUNTING OF THE BASE UNTIL ALL WIRES & CABLES HAVE BEEN PULLED THROUGH THE CONDUIT!

2. Remove the base from the marked location and proceed to drill the holes, using the hammer drill, and the 1/2" inch concrete drill bit. Ensure that the holes are drilled deep enough to insert the anchor bolts. A good depth is approximately 2"-2 1/2" inches from the surface of the concrete.
3. It should be noted that while the anchor bolts are rugged and durable, they *could* become damaged if struck recklessly. Care should be given to strike only the top of the anchors, where the force will be distributed by the provided area on top of the anchor bolt. Use the hammer to drive each of the provided anchors into the drilled concrete holes.



**Figure 7. Setting Anchor Bolts**

4. When all anchor bolts have been set, place one nut onto each of them, and use the ratchet and socket to tighten it, until as many of the threads from the bolts as possible are showing. This first set of nuts will be used later for the correct leveling of the base. You may remove the nuts if you have the appropriate shims and wish to use those instead.
5. Slide the base down over top of the conduit, while feeding the wire runs up through the conduit holes and out the top of the base. It is very important to allow at least 66" inches of wire to remain draped over the top of the base, so that there is enough left to make all of the electrical connections. It is also recommended that 3" or more of conduit protrude into the base. This is to ensure that standing water will not accumulate in the conduit. There should also be sufficient threads on the anchor bolts left to secure the base in place with the remaining 4 nuts. If this is not the case, the holes in the concrete were drilled too deep, and the installer should use smaller, or no leveling nuts.
6. Place the level on top of the base, and adjust the leveling bolts with the open-ended wrench (or add the appropriate number of shims). When it is level across the short and long sides, hand tighten the remaining 4 nuts onto the bolts.
7. Once the base has been verified in its final position at least once, and all of the above requirements have been met, it is safe to securely fasten the 4 nuts with the socket wrench. When this has been successfully completed, there should be no movement in the base whatsoever.

### **3.2.2 Installation of the Wash Select II Unit**

1. Once the base is properly leveled and secured, ensure that there is sufficient length of wire draped out the top to make the final electrical connections. If not, new cable should be pulled prior to this step. If there is sufficient length, proceed to feed them under and through the bottom of the Wash Select II main cabinet. They should fit easily into the conduit holes, which are pre-cut into the bottom, right-hand corner of the unit.

2. Set the unit onto the base, and align the four base holes to the pre-cut holes in the Wash Select II. Use the remaining 4 bolts (with washers on) to secure the top unit to the base. This is done by feeding the bolts through the holes in each of the four corners in the bottom of the main cabinet, and then tightening with the 9/16 " wrench.
3. If the unit is to be wired into an existing or new security alarm system, the installer will need to acquire the 2 spade terminal connectors, termination block, sticky wire fasteners, and appropriate lengths of 22 AWG insulated wire.



**Note:** The alarm device connected to the switch must be a Class-2 device.

When wiring the switch, it is important to ensure that the terminal block is mounted to an easily accessed, un-used, portion of the Wash Select II case. It should also be in close proximity to the naturally occurring cable runs inside of the unit. This is done in order to easily run security system wires to one common termination point, while still keeping a relatively neat appearance. A good recommended routing method would be to secure the wires from the terminals of the switch along the inside, top, left side of the Wash Select II case, and have it continue down to the bottom, just underneath the bill stacker.

The terminal block can be mounted there, and then any wires that will be brought in from the outside system can be pulled through the same wire shielding that connects the bill validator to the main circuit board. This same shielding can be purchased and used to wrap the switch wires.

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## 4 Electrical Installation

### 4.1 Wiring the Modem (Option)

The modem is optional. If any of the options requiring a modem are present, the following section should be included in the electrical setup.

#### 4.1.1 At the Unit

1. Grasp the telephone cable and measure a length sufficient to route the cable across the back of the Wash Select II unit, and up to the backside of the modem (inside left wall, if present). Follow the existing cable runs avoiding cables falling behind the hopper.
2. Cut and strip back the wire, so that the telephone connector can be crimped onto the end. Take note of which colors are going to be used, because it will need to be duplicated on the other end of the cable.
3. Using the Crimping tool, proceed to make a solid connection between one RJ-11 connector (not included) and conductors of the modem phone cable. Any conductors, which are unused, should be trimmed back with a pair of diagonal cutters, so that they are even with the outer insulation.
4. Observe the correct orientation of the telephone connector (on the front end of the modem), and carefully insert it into position.
5. Verify that the modem's AC power plug is inserted into the upper left power outlet, which is located at the top of the Wash Select II power supply on the back wall.

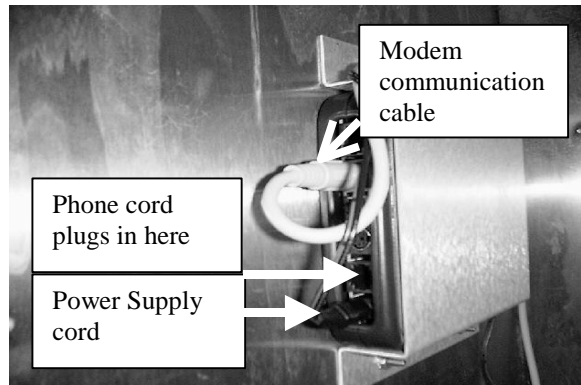


Figure 8. Modem Wiring

#### 4.1.2 At the Phone Jack



**Note:**

The order of telephone-wire conductors must match those at the Wash Select II unit.

1. Locate the other end of the phone modem wire. This may have its own conduit run, or it may run inside the optional POS4000 conduit or it may have a junction box leading to the main PLC conduit. Once the end is found, strip back the insulation, and crimp on another R-J11 modular plug. Ensure enough length remains to install a service loop, or reach to a telephone jack.



**Note:**

If you do not have a dial tone present, verify all cable connections are correct and that telephone service has been turned on to the site.

2. Before inserting the plug into the wall jack, use a spare or free telephone handset to verify that the line is active. A dial tone should be heard if service is available. Once the service has been verified, proceed to install the plug in the jack, and secure the cable run appropriately.

## 4.2 Wiring for Internet Credit Clearance (Option)

If you are using Internet credit, after the CAT5 cable is installed, the IPTran modem should be wired as follows:

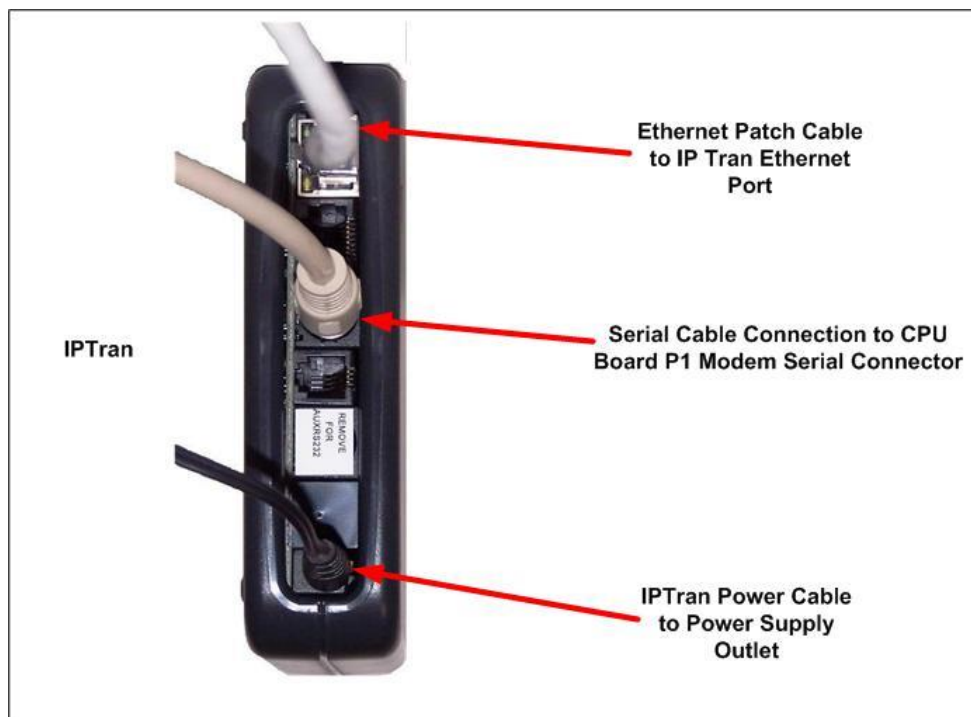


Figure 9. IPTran and DataTran Connections

## 4.3 Wiring for WashPay Integration or Kwik Trip (Option)

If you are integrating the WashSelect II with WashPay Site Management System or are a Kwik Trip site, the CAT5 Ethernet cable should be terminated with an RJ45 jack and run from

the router in the C-store and plugged into the J4 Ethernet connector located on the pre-installed expansion board, as follows:

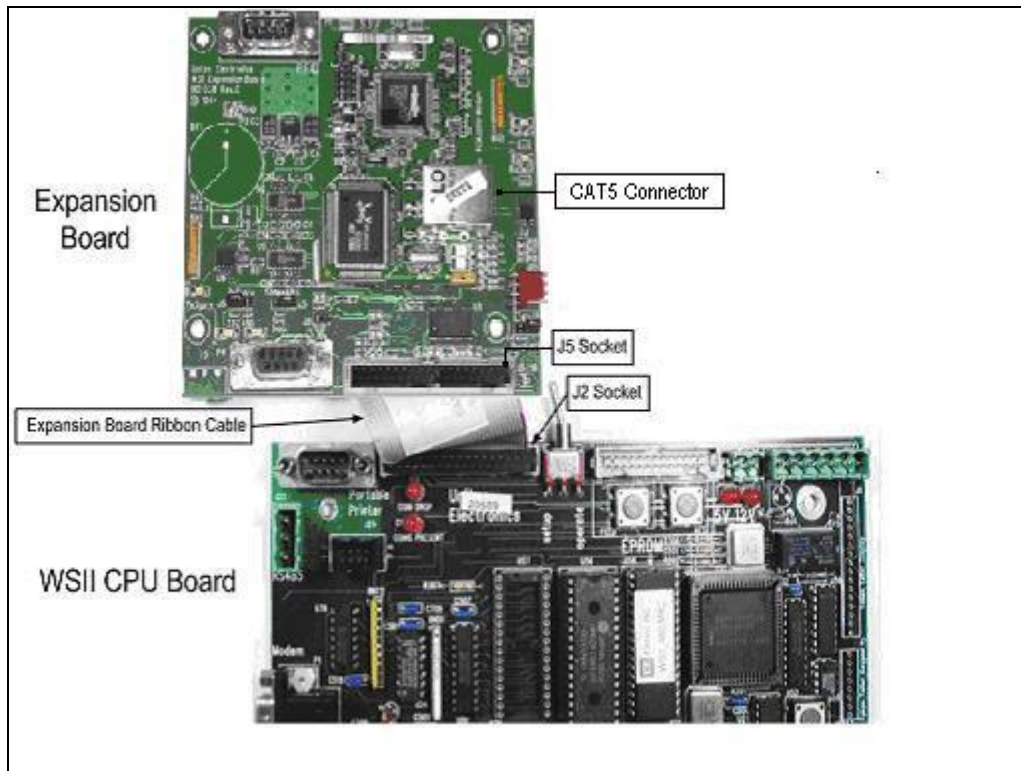


Figure 10. Ethernet Cable Wiring Inside the Wash Select II

## 4.4 Wiring the Car Wash



**Note:** The CPU Guard may require removal prior to the wiring.

Each car wash manufacturer has its own specific color code system, and wash relay pin-outs; therefore, it is important to review the appropriate wash documentation **prior** to completing this portion of the installation.

### 4.4.1 Wash Outputs

1. Locate the small, thin-tipped screwdriver, and the Wash Select II main circuit board, which is located on the inner, right-hand wall of the Wash Select II unit. On the lower left-hand corner of the CPU, there is a green, 10-Pin phoenix connector, which is labeled “J-17 - Car wash Relays” (in white), directly above the connector.



**Note:** Make note of these connections for later programming!

- Remove this connector from the socket and hold it so that the pin marked #1 is on the left side. Use the screwdriver to open and/or secure the manufacturer wash wires to each of the appropriate Unitec relay locations in accordance with the following table:

**Table 1. Wash Relays**

<b>Signal:</b>	<b>Wash Select II CPU board (lower left corner) Location:</b>	<b>Enterlink Equivalent</b>	<b>POS4000, E-system, Wash Select V1 Equivalent</b>
Wash Relay Common	J-17, Pin 9	PC	Conn. A pin 8
Wash Output #1	J-17, Pin 1	P1	Conn. B pin 1
Wash Output #2	J-17, Pin 2	P2	Conn. B pin 2
Wash Output #3	J-17, Pin 3	P3	Conn. B pin 3
Wash Output #4	J-17, Pin 4	P4	Conn. B pin 4
Spare Option Relays	J-17, Pins 5-8	P5-8	Conn. B pin 5-8

#### 4.4.2 Wash-In-Use

At the beginning of this manual, a reset circuit for the wash electronics was mentioned as a requirement. This is what we often refer to as a “Wash-In-Use” signal. It is not uncommon for values of this voltage to be as much as 115-120 VAC, so it is extremely important to verify that there is no power applied to any of the wash components before proceeding. In previous models offered by Unitec, there was a need to set a jumper on the CPU, in order to program it for a 24VAC or a 120VAC circuit; however, this is not the case with the Wash Select II. This unit is fully capable of dealing with all ranges of wash-in-use voltage.

- Locate the Wash Select II CPU board and remove the green Phoenix connector from the socket labeled J-18. This will be located on the lower left-hand corner of the CPU. Use the screwdriver to open the terminals marked as pins 1 & 2.
- Identify the signals provided as a “Wash-In-Use Hot” and a “Wash-In-Use Neutral” coming from the wash PLC. Install the two signal wires in accordance with the following table:

**Table 2. Wash-In-Use Signal**

<b>Signal:</b>	<b>Wash Select II CPU board Location (lower left corner):</b>	<b>Enterlink Equivalent</b>	<b>POS4000, E-system, Wash Select V1 Equivalent</b>
Wash-In-Use Hot	J-18, Pin #1	WUH	Conn. D pin 1
Wash-In-Use Neutral	J-18, Pin # 2	WUN	Conn. D pin 2



### 4.4.3 Wash-Fault

Some car wash manufactures include another interface signal to a unit, the WASH-FAULT signal. This signal could have a voltage as high as 115VAC, and the installer is advised to take the necessary precautions during installation.

1. Locate the same connector to which the WIU signal is connected to in section 4.1.5 above, J-18 in the lower left corner of the CPU. The Wash-Fault Hot and Wash-Fault Neutral are connected to pins 3 and 4 respectively as shown in the table below.

Table 3. Wash-fault SIGNAL

Signal:	Wash Select II CPU board Location (lower left corner):	Enterlink Equivalent	POS4000, E-system, Wash Select V1 Equivalent
Wash-Fault Hot	J-18, Pin #3	N/A	N/A
Wash-Fault Neutral	J-18, Pin # 4	N/A	N/A

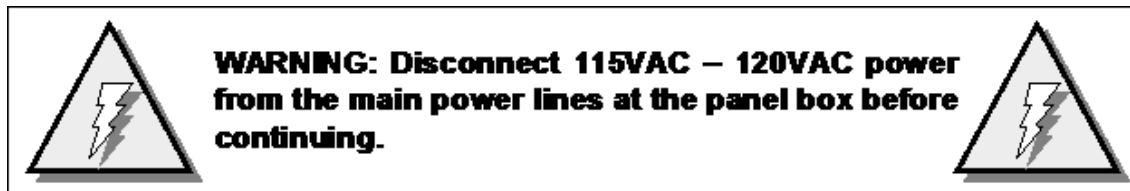
### 4.5 Wire the POS4000

If you have an optional POS4000 connection (Wash Select II POS) wire the communications cable provided with the POS4000 as follows:

Table 4. POS4000 Connection

POS4000	Wash Select II connector J22
Pin 1 – White	Pin 1 – White
Pin 2 – Red	Pin 2 – Red
Pin 3 – Black	Pin 3 – Black
Shield – Not connected	Shield, strap to base mounting bolt in case.

### 4.6 Wiring 115 VAC Main Power



There is a 3-Prong connector located in a socket on the Wash Select II main power supply assembly (lower right-hand corner on back wall). It may be necessary to pull the coin hopper out from its position in order to gain access to it. This is done by simply lifting up on the coin

hopper handle, and pulling it out the front. The cable that connects it to the CPU board will need to be removed as well. Once the power connector has been located, proceed with the rest of this section.

#### 4.6.1 Measure Wire Lengths

1. Along with the wires that were already pulled there should be a three-conductor cable for the main 120 VAC power. This cable should be 16 AWG or greater, and should consist of an environmentally rated black, white, and green colored wire. When this wire is located, use the same method employed to install the modem to neatly route this wire back to the Wash Select II power supply.
2. Use the wire strippers to peel back about 2"-3" inches of insulation from the main cable, and then remove approximately 1/4" inch from the ends of the individual wires.

#### 4.6.2 Attach the Three-prong Connector

1. Locate the 3-pronged AC connector (See Figure 8). Disassemble the outer housing by loosening the housing assembly screw, located on the top of the AC connector.

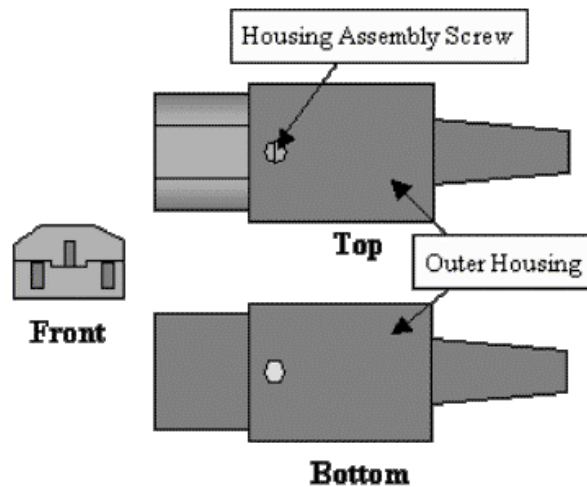


Figure 11. AC Connector

Once opened, you will see the white plastic stabilizer plate as well as the black line insulator. (See Figure 9)

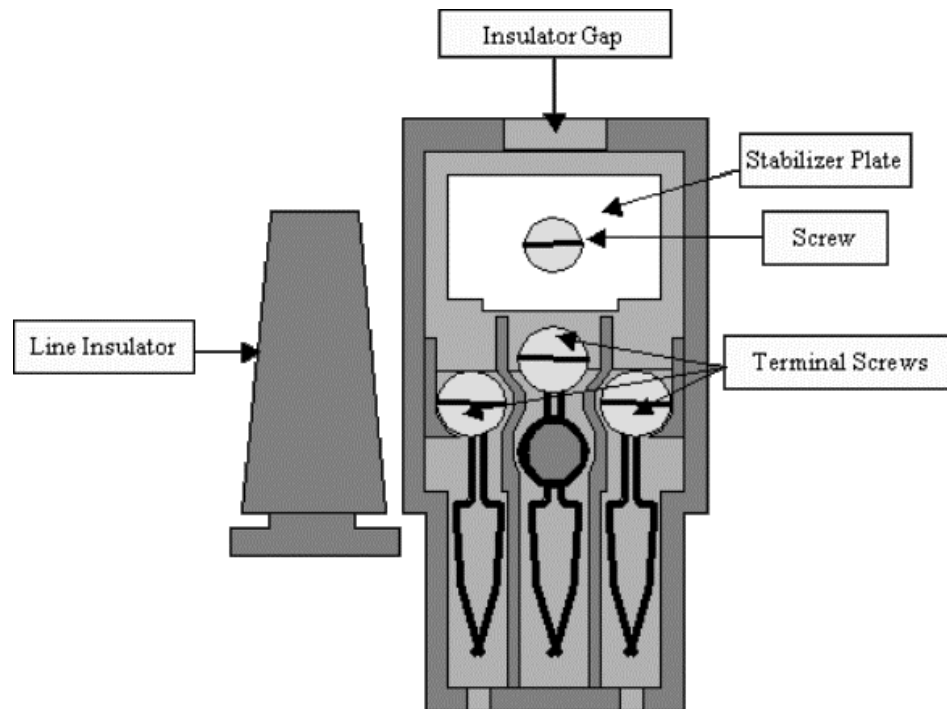


Figure 12. Inside the AC Connector

2. Remove the line insulator and set it aside for the next step. Remove the screw holding the stabilizer plate in place and set both aside until after you have finished securing the wires.
3. Thread the power cord (with the 3 exposed conductors) through the hole in the bottom of the line insulator. Continue to feed it through until about  $\frac{1}{2}$ " of outer insulation is protruding through the top. (See Figure 10)

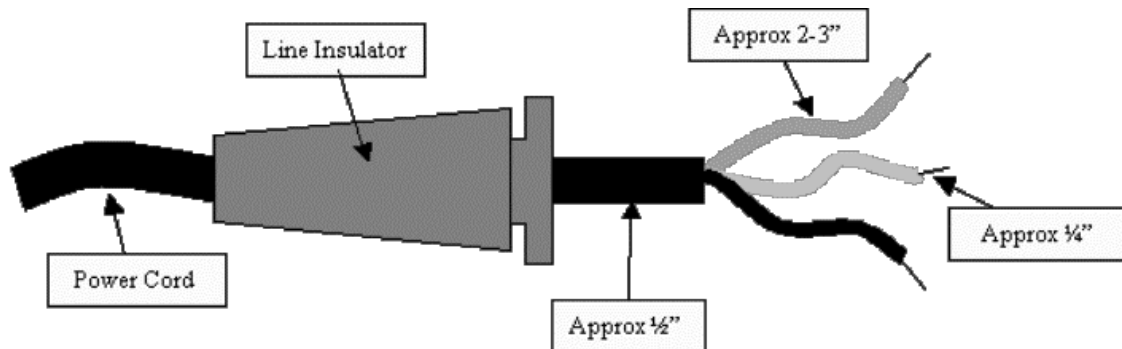
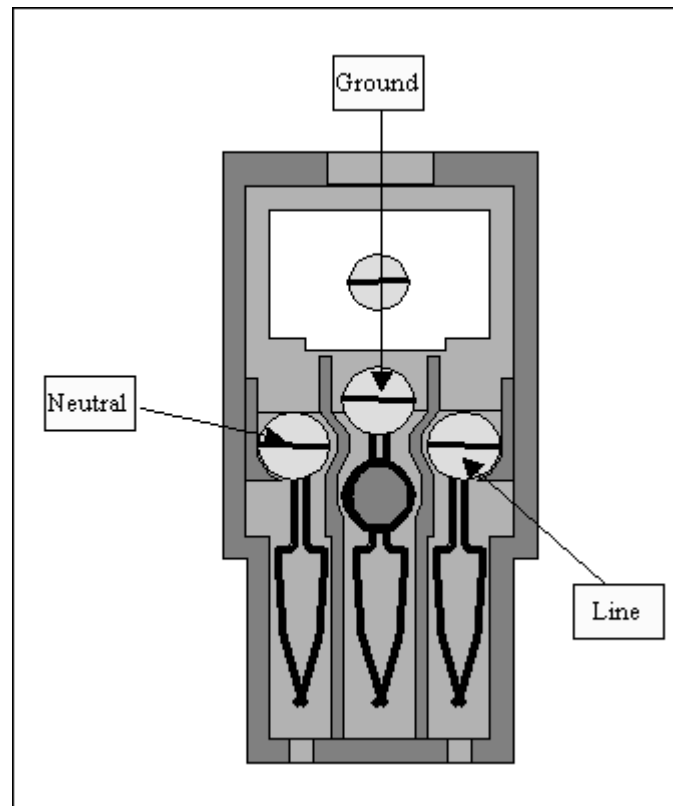


Figure 13. Thread Power Cord Through Line Insulator

4. Even though the proper wire configuration is embossed in the plastic cover, it is often very difficult to locate and verify. Refer to the drawing below for Line (HOT), Neutral and Ground connections. Secure these power wires by unscrewing the 3 terminal screws just enough to slide the end of the wires through the provided clamps. Re-tighten the screws to hold the wires in place.

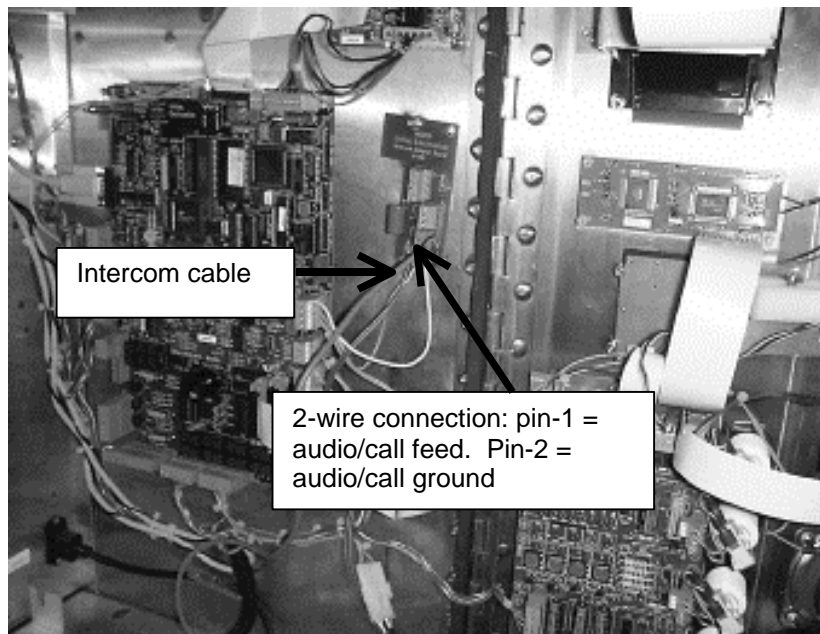


**Figure 14. Line - Neutral - Ground Connections**

5. When all of the wires have been attached, pull the rubber insulation cover up to the housing, and insert it into its original location. The three wires should be trimmed back to a length small enough to allow for a tiny portion of the main cable insulation to protrude into the case, without affecting the ease with which the top and bottom pieces could be closed. Screw the stabilizer plate back into its original position.
6. Re-assemble the AC connector and insert it into the connector located on the lower right-hand corner of the Wash Select II power supply. Use any available wire ties to route and secure any extra cable along the lower right inside wall (follow the harness).

## 4.7 Wiring the Intercom

If your unit has the intercom option installed, ensure the Help button wiring from the speaker to the intercom board and the power connection to the J10 connection on the CPU board are in place.



**Figure 15. Intercom Adaptor Board**

#### **4.7.1 Connecting a 2-wire Intercom System**

1. Locate the 2-pin connector on the “Intercom Adapter Board”. (See Figure above.)
2. Use a small flathead screwdriver to loosen the screws on the top of the 2 pin connector.
3. Locate the “Audio/Call Feed” wire of the intercom system.
4. Attach the “Audio/Call Feed” wire to pin 1 and tighten the screw to pin 1.
5. Locate the “Audio/Call Ground” wire of the intercom system.
6. Attach the “Audio/Call Ground” wire to pin 2 and then tighten the screw to pin 2.

#### **4.7.2 Connecting a 3-wire Intercom System**

1. Locate the 3-pin connector on the “Intercom Adapter Board”. (See Figure 4.)
2. Use a small flathead screwdriver to loosen the screws on the top of the 3 pin connector.
3. Locate the “Call Feed” wire of the intercom system.
4. Attach the “Call Feed” wire to pin 1 of the 3-pin connector and then tighten the screw.
5. Locate the “Audio Feed” wire of the intercom system.
6. Attach the “Audio Feed” wire to pin 2 of the 3-pin connector and then tighten the screw.
7. Locate the “Audio/Call Ground” wire of the intercom system.
8. Attach the “Audio/Call Ground” wire to pin 3 of the 3-pin connector and then tighten the screw.

### 4.7.3 Connecting a 4-wire Intercom System

1. Locate the 4-pin connector on the “Intercom Adapter Board”. (See Figure 4.)
2. Use a small flathead screwdriver to loosen the screws on the top of the 4 pin connector.
3. Locate the “Call Feed” wire of the intercom system.
4. Attach the “Call Feed” wire to pin 1 of the 4-pin connector and then tighten the screw.
5. Locate the “Call Ground” wire of the intercom system.
6. Attach the “Call Ground” wire to pin 2 of the 4-pin connector and tighten the screw.
7. Locate the “Audio Feed” wire of the intercom system.
8. Attach the “Audio Feed” wire to pin 3 of the 4-pin connector and then tighten the screw.
9. Locate the “Audio Ground” wire of the intercom system.
10. Attach the “Audio Ground” wire to pin 4 of the 4-pin connector and tighten the screw.

## 4.8 Wiring External Fleet Device Interface

For this option to work, you need to have an EXT FLEET card plugged to J6 and J7 on the I/O board (I/O board is located on the Wash Select II door).

Depending on the type of external fleet device you are connecting to (eWash, Wash Card or Express Key), one of the following connections will have the Ext Fleet system up and running.

### 4.8.1 Hook up to Washcard Control Box

Remove connector J1 from the Ext Fleet card on the lower left of the I/O board and make the following connections.

J1 of Unitec Wash Card interface board

Table 5. J1 of Unitec Wash Card interface board

Pin Number	Signal Name	Connect to
1	Input 1 A	Washcard TB-C pin 2 (C)
2	Input 1 B	Pin 5 of J1 (this connector)
3	Input 2 A	
4	Input 2 B	
5	10-16VDC+ Isolated	Pin 2 of J1 (this connector)
6	10-16VDC- Isolated	Washcard TB-C pin 3 (N.O)

Remove connector J2 from the Ext Fleet card on the lower left of the I/O board and make the following connections.

**Table 6. J 2 of Unitec Wash Card interface board**

Pin Number	Signal Name	Connect to
1	Output 1 N.O.	Washcard TB-A pin 10 (Input 5)
2	Output 2 N.O.	Washcard TB-A pin 12 (Input 6)
3	Output 3 N.O.	Washcard TB-A pin 14 (Input 7)
4	Output 4 N.O.	Washcard TB-A pin 16 (Input 8)
5	Output Common	Washcard TB-A pin 11 (Common 5+6)

**Table 7. Washcard input assignments**

Input	Corresponding Wash Select II wash & display
Washcard TB-A pin 10 (Input 5)	Wash 1 (Display at bottom) typically least expensive wash
Washcard TB-A pin 12 (Input 6)	Wash 2 (Display 2 <sup>nd</sup> from bottom)
Washcard TB-A pin 14 (Input 7)	Wash 3 (Display 2 <sup>nd</sup> from top)
Washcard TB-A pin 16 (Input 8)	Wash 4 (Display at top) typically the most expensive wash

#### 4.8.2 Hook Up to Express Key Control Box

Remove connector J1 from the Ext Fleet card on the lower left of the I/O board and make the following connections.

(The Express Key control box has recently been changed. It is important that you know which version your unit has when making the connections. The old version is a large white box. The new version is a small green circuit board.

**Table 8. J1 of Unitec Wash Card interface board**


Pin Number	Signal Name	Connect to (Old Version)	Connect to (New Version)
1	Input 1 A	Express key JP 3 Relay In (purple)	Express key JP 3 Relay In (spade plug)
2	Input 1 B	Pin 5 of J1 (this connector)	Pin 5 of J1 (this connector)
3	Input 2 A		
4	Input 2 B		
5	10-16VDC+ Isolated	Pin 2 of J1 (this connector)	Pin 2 of J1 (this connector)
6	10-16VDC- Isolated	Express key JP 3 Relay Out (brown/white)	Express key JP 3 Relay Out (spade plug)

Remove connector J2 from the Ext Fleet card on the lower left of the I/O board and make the following connections:

**Table 9. J 2 of Unitec Wash Card interface board**

Pin	Signal Name	Connect to	Connect to:
-----	-------------	------------	-------------

Number		(Old Version)	(New Version)
1	Output 1 N.O.	Express key JP5a Pin 4 (Button 4)	Express key JP5a Pin 4 (Gray)
2	Output 2 N.O.	Express key JP5a Pin 3 (Button 3)	Express key JP5a Pin 3 (White)
3	Output 3 N.O.	Express key JP5a Pin 2 (Button 2)	Express key JP5a Pin 2 (Green)
4	Output 4 N.O.	Express key JP5a Pin 1 (Button 1)	Express key JP5a Pin 1 (Orange)
5	Output Common	Express key JP5a Pin 5 (Common)	Express key JP5a Pin 5 (Black)

 **Note:** Express key should be configured for a 1 second output pulse

A 24 VAC power source may be tapped from the Wash Select II power supply on the upper right of the inside back of the unit.

Grey proximity Block on top back power supply panel. (The chart below is for the old version Express Key control box only)

**Table 10. 24 VAC Source Connection**

Terminal	Signal	Connect to
Pin 2	24AC hot	Grey
Pin 10	N24AC neutral	White

### 4.8.3 Hook Up to eWash Control Box

Remove connector J1 from the Ext Fleet card on the lower left of the I/O board and make the following connections.

**Table 11. J1 of Unitec Wash Card Interface Board**

Pin Number	Signal Name	Connect to
1	Input 1 A	eWash J5 Pin 6
2	Input 1 B	Pin 5 of J1 (this connector)
3	Input 2 A	
4	Input 2 B	
5	10-16VDC+ Isolated	Pin 2 of J1 (this connector)



6	10-16VDC- Isolated	eWash J5 Pin 5
---	--------------------	----------------

Remove connector J2 from the Ext Fleet card on the lower left of the I/O board and make the following connections.

**Table 12. J2 of Unitec Wash Card Interface Board**

Pin Number	Signal Name	Connect to
1	Output 1 N.O.	EWash J1 Pin 16
2	Output 2 N.O.	EWash J1 Pin 17
3	Output 3 N.O.	EWash J1 Pin 17
4	Output 4 N.O.	EWash J1 Pin 18
5	Output Common	EWash J1 Pin 15

A 24 VAC power source may be tapped from the grey proximity block located inside the Wash Select II beside the power supply on the upper right of the inside back of the unit.

**Table 13. 24 VAC Connection**

TERMINAL	SIGNAL	CONNECTED TO
PIN 2	24 VAC HOT	eWash J5 Pins 6 & 6 and eWash J1 Pin 2
PIN 10	24VAC NEUTRAL	eWash J5 Pin 7 and eWash J1 Pin 1

## 5 Startup / Programming

For the following sections, the Wash Select II unit must be powered and placed into the operational state known as “SETUP MODE”. The unit can be operated as such by placing the toggle switch (located in the top and middle portion of the main circuit board) towards the rear of the unit. The position of the switch can be verified by looking at the circuit board and making sure that the correct position is written next to it, or by simply viewing the customer display screen to verify that the correct status is shown.

While in setup mode, the keypad is used as a data input device. What this means is that each key may have more than one function, in addition to the numeric place it occupies. For a complete list of the alternate functions, refer to Appendix A. The installer needs to be aware of the following key functions (assuming the standard Wash Select II keypad) for correct entry of data:

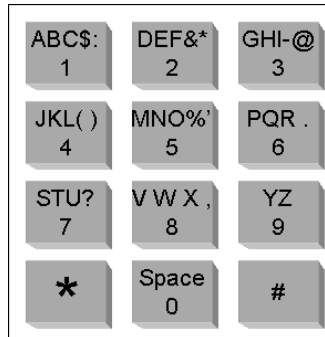


Figure 16. Standard Wash Select II Keypad



**Note:**

If you are installing a Canadian version Wash Select II, refer to Appendix D for more information.

### 5.1 Wash Setup


This segment will step through the setup of the wash prices and names. Each of these functions can be found under the “Wash Setup” category of the setup menu, which will be presented on the main customer display. If you have a POS4000 connected to your system then you may configure the Wash Select II first then configure the POS4000 next. You may configure the Wash Select II names and prices at the POS4000 and the Wash Select II will be updated if it is communicating at the time.

#### 5.1.1 Wash Prices

In Setup mode scroll to the Wash Setup menu, then select and scroll to the wash that you wish to change the price for and press (\*) to select it. The wash prices should be input in order, from the least expensive (wash 1/bottom display) to most expensive (wash 4/top display). To disable a wash from the available choices, input a price of zero dollars followed

by the (\*)-key. All wash prices must be input as cents. For example, a wash price of \$4.00 would be entered as (4) (0) (0) (\*).

### 5.1.2 Wash Names

Programming customized wash names uses alphanumeric characters. In this application, the (#)-key doubles as a space-bar, as well as moves from one letter's location one place to the right into the next letter's location. To begin the process, access the "Wash Setup" menu and scroll using the -key to select the wash name you wish to change. Refer to Appendix A of this manual for entering text.

## 5.2 Wash Interface

Different wash manufactures will require a specific style of output relay pulse in order to function properly. The "Wash Interface" part of the programming is designed to bridge the gap of incompatibilities among many different logic controller (PLC) signals, and unit control signals. Some carwashes require the ability to disable cash upgrades or create just a momentary pulse, while others would require the ability to hold a wash relay closed.

### 5.2.1 Relay Stacking

Relay stacking is the ability for Wash Select II™ to hold back all wash arming signals while the wash is "In Use". Most car wash systems will work with or prefer to work with the "Relay Stacking" set to "YES/Enabled". Some systems which have bay entry signage built into the carwash may require the "Relay Stacking" to be set to "No/Disabled".

- Enabled – No arming signals will be sent to the wash if the wash is "In Use" (See Wash Handshaking). If a customer comes up to the unit and purchases a wash while another customer is in the wash, the Wash Select II™ will wait till the wash is not "In Use", before sending the second customer's wash arming signal.
- Disabled – The Wash Select II™ will send any wash arming signal immediately to the Carwash regardless of the state of the carwash.

**Default Setting is: Yes/Enabled.**

### 5.2.2 Relay Latching

Relay Latching describes the type of relay output for the wash arming signals. Most car washes prefer the signals to be "No/Pulsed".

- Yes/Latched – Relays are turned on when the arming signal is sent to the carwash. The relays stay on until either a customer upgrades the wash (if upgrading is enabled) or the wash becomes "In Use".


- No/Pulsed – Relays are turned on for a 2 second pulse when the arming signal is sent to the carwash. The relays will not activate again unless the customer upgrades the wash (if upgrading is enabled).

**Default Setting is: No/Pulsed**

### 5.2.3 Relay Pattern

The Wash Select II is equipped to allow up to 8 relays to be used for programming of wash packages. The default pattern of 1 output for each wash is the standard setting for most carwashes, and most manufacturers do not require this pattern to change. If you wish to change this pattern, refer to the Wash Select II™ Operations Manual for more information.

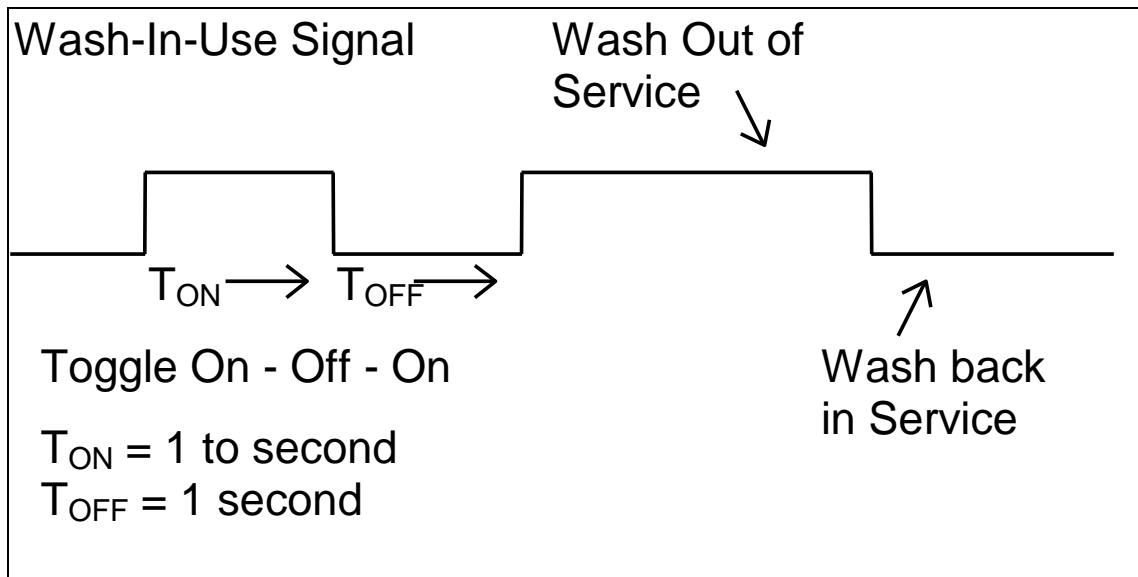
### 5.2.4 Auto Out of Service Detect



**Note:** The wash will remain out of service for as long as the signal is held high.

Certain wash manufacturers will include a feature that allows the unit to know when the wash is experiencing trouble, or has gone out of service. This feature will utilize the wash-in-use signal to initiate a series of timed pulses, which we will decipher, and then use to prevent any further transactions from occurring. This is known as “Automatic out of Service Detection”. To program the Wash Select II to accept this message, place the main board in “Setup Mode” and open the “Wash Interface” menu. The “Auto out of Service” is shown there. The installer should choose to *enable* this feature. Refer to the diagram below to view the pattern associated with the out of service routine.

**DEFAULT: ENABLED**



**Figure 17. Wash out of Service Sequence**

## 5.2.5 Wash Handshaking

Wash handshaking is defaulted to use a “Wash-In-Use” signal, versus a “Cycle Complete”. There should be no reason to change this setting unless the installer is configuring to interface using “Hamilton Mode”. Operation in this mode will cause the “Cash Upgrades” to be automatically disabled, and also cause the “Automatic By Price” mode to revert back to “Forced Selection”, if either one was set. It should therefore be verified on the Wash Select II configuration report as accepting a “Wash in Use” input.

## 5.2.6 Wash Fault

Comes disabled by default, but you may enable it should you need to interface to a carwash control that needs a separate wash fault signal. A choice of selecting when on/off is given along with the interval of time after which a signal on the fault line is considered a wash out of service.

## 5.2.7 Out-of-Service Timer (OOS)

For washes with CYCLE COMPLETE handshaking, some washes (e.g. Ryco) need a programmable time before declaring Wash Out Of Service. This feature may be programmed for 1 sec to 300 sec (5 min.).

To program this feature, enter the Wash Interface menu and scroll until you see the OOS Timer sub menu. Press the (\*) button to enter the menu and then set the desired OOS time.

## 5.3 Customer Interface Menu

The Customer Interface portion of the Wash Select II programming determines how it will be used to interact with the customer. For programming these kinds of operations, the Wash Select II unit has to be placed into the setup mode of operation, and have configuration changes made to the “Customer Interface” menu. The items below are found within that main menu title, and are programmed under individual sub-menus.

### 5.3.1 Customer Stacking

The “Customer Stacking” feature forces the system to deny customer interaction while the wash is in use. The “Customer Stacking” feature of the Wash Select II unit is enabled as the default setting, and typically does not require any changes.

### 5.3.2 Forced Selection

This feature, when enabled, forces the customer to make his/her wash selection before any wash type is issued. Typically, a customer will insert the money prior to making a wash selection, and if the unit is set up for “Automatic By Price”, the Wash Select II will automatically issue the most expensive wash for the amount entered. For example, a customer pulls up to the unit and wants to purchase the \$4.00 wash, and the most expensive

is listed at \$5.00. They proceed to insert a five-dollar bill and the Wash Select II instantly issues a command to run the \$5.00 program, instead of giving them the option to make a selection (or ever giving their dollar back in change). Careful consideration should be given to how this feature will be configured.

The Wash Select II unit is **ENABLED** by default, and should be changed only if the wash types are more expensive and buy-ups are permitted.

### 5.3.3 Allow Upgrades

The car wash equipment from some manufactures does not feature the ability to buy up to the next, more expensive wash. In a case like this, the Wash Select II unit should be programmed not to allow buy-ups. This item can be found under a sub-menu function labeled “Allow Upgrades”, which is located within the “Customer Interface” main menu. Basically, this function will lock the customer into a specific wash, once a selection has been made and enough payment has been entered.

**Default: Disabled**

### 5.3.4 Auto Selection Time

Unique to the Wash Select II system is a user programmable auto selection timer. This feature will automatically purchase the most expensive wash, after a predefined period of time, for the amount of money that is escrowed. This feature is also independent of the forced and auto selection modes.

**Default: Disabled**

## 5.4 Connecting to a POS4000

1. Wire the POS4000 cable connections per the following connections:

**Table 14. POS 4000 Cable Connections**

<b>POS4000</b>	<b>Wash Select II connector J22</b>
Pin 1 – White	Pin 1 – White
Pin 2 – Red	Pin 2 – Red
Pin 3 – Black	Pin 3 – Black
Shield – Not connected	Shield, strap to base mounting bolt in case.

2. Turn on the Wash Select II™ and put it into “Setup Mode”. If you have more than 1 bay, set up the unit 1 at a time, with un-configured units turned off.
3. If the POS4000 is connected and both units are powered, the RX light on the 485 communications module should be blinking every couple of seconds. If neither of

the lights is blinking, you may have a failed connection, or a failed POS4000. A failed communications module is also possible.

4. Enter the POS4000 Link sub menu and enable the interface by enabling the “Interface Mode”.
5. If you have a multi-bay system, you will have to set the bay addresses (Wash 1 is Bay 2, Wash 2 is Bay 3 etc).
6. Set the unit to “Operate Mode”. You should see both the RX and the TX lights on the Wash Select II™ 485 communications module begin to blink within 10 seconds. They should blink one after the other with a pause of less than 1 second between blinking. If you have more than one bay, the RX light should be on longer than the TX light.
7. Set the unit back into “Setup Mode” and continue configuring the other settings from in the POS4000 link per the operations manual, if necessary.
8. Configure the POS4000 as per the POS4000 manual. POS4000 will download pricing and naming information to a Wash Select II upon power up or after discontinuation of communications with a Wash Select II for over 20 seconds

## 5.5 Multi-unit Fleet System (Optional Feature)

Up to 6 Wash Select IIs can be connected together for a multi-unit fleet system operation, in which one of the Wash Select IIs will be the master and all the rest remotes. This system enables the sharing of fleet accounts generated at the master at all the bays. The master needs to be in operation mode for validating fleet account verification requests from the remotes.

Keep in mind that you don’t need a POS4000 for this system. All you have to do is daisy chain the Wash Select IIs as you would daisy chain them for Wash Select II/POS operation, only without the POS4000. This is an optional feature and requires a plug in module (the RS-485 board) for the Wash Select II (comes with the Wash Select II multi-unit fleet system). A remote unit is sometimes referred to as a secondary unit.

Here is a guide for getting the Wash Select II-MULIT-UNIT-FLEET system to communicate with each other:

1. Wire the communication cable connections per the following connections:

**Table 15. Multi-Unit Fleet Cable Connections**

Primary Wash Select II connector J22	Remote Wash Select II connector J22
Pin 1 – White	Pin 1 – White
Pin 2 – Red	Pin 2 – Red
Pin 3 – Black	Pin 3 – Black
Shield – Not connected	Shield - Not connected

Turn on the Wash Select II™ and put it into “Setup Mode”. If you have more than 1 bay, set the system up one at a time, with un-configured units turned off.

Begin with the master unit.

1. Enter the POS4000 Link sub menu and set “Interface Mode” to 2, “Multi-unit Link”.
2. Proceed to “set bay address” in the POS4000 Link menu.
3. If you are setting up the master, then set the bay address to 1.
4. After this, the Wash Select II automatically asks for NUMBER OF BAYS.
5. The number of bays is equal to the number of Wash Select IIs in your system. If you have two Wash Select IIs (one master + one secondary), NUMBER OF BAYS = 2. The NUMBER OF BAYS is set at the master Wash Select II only, never at any secondary.
6. If you are setting up the bay address for the remotes, follow the chart below.

**Table 16. Remote Wash Select II Bay Addresses**

<b>Remotes</b>	<b>“Set bay address” in “POS4000 link” menu to</b>
1 <sup>st</sup> remote	2
2 <sup>nd</sup> remote	3
3 <sup>rd</sup> remote	4
4 <sup>th</sup> remote	5
5 <sup>th</sup> remote	6

7. Set the units to “Operate Mode”. You should see both the RX and the TX lights on the Wash Select II 485 communications modules begin to blink within 10 seconds. They should blink one after the other with a pause of less than 1 second between blinking.
8. If you don’t see the RX and TX LEDs blinking, check your connections.
9. If the RX and TX LEDs are blinking, try a fleet account generated at the master at the remote. The account can be standard, coupon or debit; either in the form of code or card.

## **5.6 Tokens (Optional)**

### **Single Coin Acceptors:**

Where a site uses site-specific tokens, the single coin acceptor needs to have an accurate sample of the specific coin used. This is done by removing the factory installed sample from the slot marked “tokens”, which is located on the side of the acceptor, and replacing it with the unique site sample. Once the sample has been replaced, the Wash Select II must be placed into the setup mode and programmed to credit the proper amount for the token. After the token value is programmed, the installer can set a maximum amount of tokens that any given customer is permitted to use for any given transaction. Both of these functions can be found under the menu item “Cash & Tokens”. Remember, the value of the token should be input in cents, rather than dollars. If any difficulties arise, Please call the Unitec Technical Services Department at: 1-443-561-1200.



### **Multi-Coin Acceptors:**

If you have the multi-coin acceptor (IDX), and wish to program site-specific tokens, please refer to the Operating manual for programming instructions.

## **5.7 Testing the Entry System**

After performing the installation and programming, you must test the Wash Select II. Each of the tests that follow is designed to test a specific aspect of the Wash Select II functionality.

Before testing the entry system, a few things must first be verified and/or completed.

- If a proximity option is present, the infrared relay will have to be installed on the outer surface of the main power supply, in its proper connector.
- If speech option is present and the messages have not yet been recorded, they will need to be. If the playback volume has not been set, it will also need to be.
- If a modem, card reader, or thermal printer is installed as an option, it will require its own testing prior to completing this portion. These and other tests can be found in the Wash Select II Operations Manual.
  1. Verify 120 VAC power is available to the unit at the machine room circuit breaker.
  2. Verify that the unit is in “Operate Mode”, and that all of the programmed washes appear in their proper display window, with every one of the backlights illuminated.
  3. Place the unit into “Setup Mode”, and verify that the unit’s main customer display indicates the menu item “Reports”. Scroll through these menu items, until “Diagnostics” is displayed, and select that option.
  4. Under the “Diagnostics” sub-menu, you will find several test functions. Among these is the capability of testing all standard components, and many optional ones, such as card readers and thermal printers. Scroll through, and perform all of the tests required under each menu topic that applies to your specific installation.
  5. When all of the above diagnostics have been performed, troubleshoot any problem areas, or proceed to the next section.

## **5.8 Testing the Washes**

It is necessary to make sure that the connections between the PLC and the unit controller are properly made and accurate. Purchasing all of the available wash types and by verifying that the correct wash is given properly tests this connection. These steps should be performed on all new Wash Select II installations. Prior to beginning, ensure that the toggle switch is placed in the “Operate Mode”.

1. Using any combination of \$1s, \$5s, & \$10s, purchase all of the washes advertised.

2. Verify that every wash purchased gives the proper wash package at the car wash side. Make any adjustments on relay output wires that may be required, and verify that the Wash-In-Use signal resets the controller electronics.
3. Pull the car wash relays connector (J-17 on CPU), and proceed to purchase all of the washes again, by using tokens, quarters, and a fleet account code. There is no need to test the actual washes given; rather, just verify that the corresponding relay closes, by simply viewing the status of the red LEDs located on the back of the display board. Once this step is complete, replace the J-17 connector and continue to step 4.
4. If you have connected to a POS4000, print out a code for each wash at the POS4000 and try it at the Wash Select II™.
5. Close and bolt the door, insert the locks and verify that the unit is secure. Using a clean rag and a gentle soap, clean the box's frame, door, and surrounding areas.

## Appendix A. Guide for Alternate Keypad Functions

This diagram shows all of the alphanumeric keypad functions available with the standard Wash Select II keypad. To access these items, the unit should be in the test mode and within a menu that requires data to be entered as text. Each of the keys can be depressed multiple times to scroll through the various available symbols.

### Example 1:

The key marked **1** can be used to input the letters 'A', 'B', and 'C', and the symbols '\$' and ':'. To input the letter C, you would press **1** three times, then **#** to lock. You will hear a beep with each press, and a symbol will appear in the top display window. Let's say that the next symbol to be entered is '\$'. You would press the **1** key four times, then **#** to lock. The same thing as above will happen. When the text is completely entered, press **\*** to accept the data.

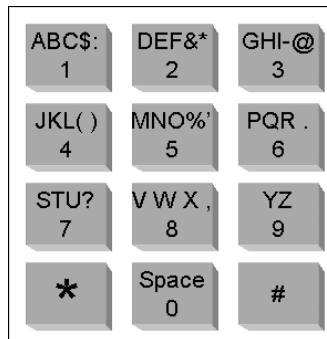


Figure 18. Alternate Keypad Functions

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## Appendix B. Recorded Speech Messages

Recording custom speech messages is accomplished by connecting the supplied microphone into the Speech Module microphone plug located under the clear cover over the CPU board. Speech programming is initiated by using the “Speech” menu in “Setup Mode”.

Directly underneath the CPU cover is a small, piggybacked circuit board with a black volume control knob protruding straight out. This is called the “Speech Module. The volume output from the speech module can be adjusted by depressing the black, square button to play message1, and turning the control knob clockwise to increase, or counter-clockwise to decrease the volume. The recording volume can also be adjusted by rotating the small, circular, white, slotted dial, just to the right of the volume knob. For the loudest recording volume, turn the dial counterclockwise. The 10 o’clock position tends to work best.

To record a message, place the unit into “Set-up Mode” and scroll through the list of menu items until “Speech” is displayed on the main customer display. Then, depress the (\*) button on the keypad. Scroll until “Record Messages” is displayed and press the (\*) button once again. Place the microphone’s connector into the jack, located at the top of the speech module, and enter the number of the message that you wish to re-record.

To playback the message that was just recorded, press the (3) button to scroll forward until “Play Message” is displayed, and press the (\*) key. Key in the appropriate message number, followed by the (\*) key, and the message will begin to play.

There are 2- red LEDs on the module: one for “Play”, and the other for “Record”. These will illuminate during either the playback or record cycles as an indicator of the current status. At the end of the message recording time, the “Record” LED will extinguish.

Here is the complete list of Wash Select II messages and scripts:

1) GREETING MESSAGE (10.25 seconds)

Hello, welcome to *OUR* Car wash. Please Select your wash or enter your code now.

2) SELECT PACKAGE (4.25 seconds)

Please select your wash package now.

3) PACKAGE 1-PURCHASED (8.5 seconds)

You have purchased the *Express Wash*. You may enter the wash if it is ready.

4) PACKAGE 2 PURCHASED (8.5 seconds)

You have purchased the *Super Wash*. You may enter the wash if it is ready.

5) PACKAGE 3 PURCHASED (8.5 seconds)

You have purchased the *Deluxe Wash*. You may enter the wash if it is ready.

6) PACKAGE 4 PURCHASED (8.5 seconds)

You have purchased the *Works Wash*. You may enter the wash if it is ready.

7) CODE INVALID (4.25 seconds)

Your code is invalid. Please try again.

8) RECEIPT PROMPT (4.25 seconds)

Would you like to have a receipt?

9) AUTHORIZING (5.75 seconds)

Please wait while your card is being authorized.

10) CARD FAILURE (5.75 seconds)

Your transaction was not authorized. Please try again or use another payment method.

11) HOPPER FAILURE (8.00 seconds)

Your change was not completely dispensed.

12) WASH IS READY (8.00 seconds)

The wash is now ready. Please drive in slowly following the entrance sign on the car wash.

13) EXACT CHANGE ONLY (5 seconds)

Please use exact change only.

14) ADD MONEY NOW (6.75 seconds)

Please add payment for your selection

15) SELECT WASH TYPE (6.75 seconds)

Please Select Soft-touch or Touch-free now.

16) BAD CARD READ (5.75 seconds)

Your card could not be read. Swipe your card again, or try another card.

17) ENTER PIN (3.25 seconds)

Please enter your PIN number.

18) ENTER DATA (3.25 seconds)

Please enter the requested information.

19) NETWORK ERROR (4.25 seconds)

Sorry, we were unable to process your transaction at this time.

20) SELECT CREDIT/DEBIT (3.25 seconds)

Please select Credit or Debit.

21) ONE MOMENT PLEASE (2.50 seconds)

One moment please.

22) BAD CARD ORIENTATION (5.75 seconds)

Please check your card orientation, stripe to the right.

23) CREDIT TERM CUSTOM (5.00 seconds)

(Customized Credit Terminal Decline Message)

24) SELECT AN OPTION (3.25 seconds)

Please select an option.

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## Appendix C. Paging Error Codes

Numeric Pager format:

#####XXXXX

Where ##### is Site ID (misc menu)

And XXXXX is carwash Error Code

Text format is:

Carwash ##### MMMMMMMMMMMMMMMM

Where ##### is Site ID (misc menu)

And MMMMMMMMMMMMMMMM is the carwash error code in text format

**Table 17. Pager Error Codes**

Error Code # (Numeric)	Text Name (Text/TAP)	Detailed Description	Problem Type	Priority (Voice/Tone)	Lower Tolerance	Upper Tolerance
1	HOPPER LOW	Hopper low-level sensor detected an absence of quarters. This also occurs if hopper is unplugged. Detected when unit is idle	Warning	2	1	1
2	HOPPER JAM/EMPTY	Hopper failed to dispense a customer change. Amount will show up in overpayments.	Warning	2	1	2
3	WASH WARNING	Wash Warning signal input activated	Warning	2	1	5
4	WASH OUT-O-SERV	Wash Out of Service signal detected on Wash in Use input	Fault	3	1	5
5	WASH TIMEOUT	Wash was armed but the wash in use signal was not detected within 10 minutes.	Warning	1	2	5
6	CREDIT ERROR	System rejected several cards due to a credit network problem	Warning	1	3	4
7	CASH FRAUD	System registered cash after the cash was disabled. Possible salting or stringing attempt.	Warning	1	2	3
8	PRINTER PAPER	Printer Paper is out	Warning	2	1	2

Error Code # (Numeric)	Text Name (Text/TAP)	Detailed Description	Problem Type	Priority (Voice/Tone)	Lower Tolerance	Upper Tolerance
9	PRINTER PWR ERR	No 24VDC power to printer	Warning	2	1	2
10	PRINTER ERROR	Printer is either disconnected, malfunctioning, or paper head arm is disengaged.	Warning	2	1	2
11	BILL JAM	A bill is jammed in the bill validator.	Warning	2	1	1
12	BILL STACKER FULL	The bill stacker needs to be emptied.	Warning	2	1	1
13	BILL FAILURE	The bill validator has failed.	Warning	2	1	1
14	CARD READER ERR	Multiple "Bad Card reads" (doesn't include bad card orientations) have been registered. Card reader may be faulty or dirty	Warning	1	25	25
15	PAGER TEST	Use this to do a Pager Test	Warning	1	1	99
16	WASH FAULT	Wash Fault Input has been activated	Fault	3	1	2
17	POWER ON	This message is never paged, but it will appear on the pager log when it is printed.				
18	WASH IN SERVICE	This page is received when the wash goes back in service after being out of service.				
21	LOGIN FAILED	Network Login Failed		1	10	10
22	LOGIN SUCCESS	Network Login Success		0	1	1

**PROBLEM TYPES:**

Warning: System needs attention but the unit is still operating.

Fault: system needs immediate attention and is not allowing cars to be washed (out of service)

**VOICE TYPE PAGER NUMBER:**

After the programmed "pause time" the Wash Select II will beep a number of times as programmed by the voice site ID (1-10 times). After a 2 second pause, the wash select will send a series of beeps according to the priority. This will repeat 3 times, until the wash select hangs up. The voice type pager is useful if you do not have a pager but want the wash select to call your cell phone, home, or answering machine.

**EXAMPLE:**

Voice Site ID = 1  
 Problem = Wash Fault (or Wash out of service)  
 Beep.....Beep Beep Beep..... Beep.....Beep Beep Beep

## Appendix D. Additional Steps for Canadian WSII Install

This section gives a description of what makes the Canadian WSII different from the US version. If you cannot find a piece of information that you think is pertinent to the Canadian WSII, and is not mentioned here, it must have been true for both the US and Canadian versions and you should be able to find it in other sections of this manual.

### START UP QUESTIONS

#### What coin is your site dispensing?

Remember that the coin that is dispensed is the one that is diverted by the coin acceptor, and ends up in the hopper.

If your answer is \$1 coin, do the following.

- From the SETUP menu, go to “CASH & TOKENS”, and select “COUNTRY CODE”.
- Set COUNTRY CODE to 2.
- From the “cash & tokens” menu, select DISPENSE VALUE and set it to \$1.

If your answer is QUARTERS, do the following.

- From the SETUP menu, go to “CASH & TOKENS”, and select “COUNTRY CODE”.
- Set COUNTRY CODE to 1.

#### Do you have tokens for use at your entry stand?

If your answer is YES, note the following.

- You can have up to three different types of site-specific tokens. Unitec sends the coin-acceptor programmed to accept the Canadian \$1 coin, \$2 coin and quarters. Programming the unit to take tokens is up to the site, as every site has its own tokens.
- For more tokens, your token values should be an integer-multiple of the lowest-value token. For example, if your lowest-value token is \$1, your second and third token values should be one of \$2, \$3, \$4, etc. Of course, you wouldn't program two tokens to have the same value.
- You have the option of limiting the number of tokens a customer can use per car wash purchase; you can do so from the “cash & tokens” menu in the setup mode by setting “max tokens/cust” to any number you want.
- The WSII does not keep an account of the different types of tokens your site may have; we just show the total value of all the tokens on the accounting report.

#### You don't want to accept quarters?

NOTE: You can do this only for the standard Canadian WSII (accepts all quarters, \$1 and \$2 coins, and tokens).

- Remove the coin acceptor label that reads “Quarters, \$1 & \$2 coins, Tokens” from the front of the door.
- Replace the new label that reads “\$1 coin, \$2 coin, Token”.
- Put unit in setup mode.
- Go to Diagnostics main menu.
- Go to the “Test bills/coins “ sub-menu.
- Open the cover of the IDX acceptor.
- Turn the rotary switch of the IDX to position 5.
- Press the reset button to the left of the rotary switch only once.
- Turn the rotary switch back to zero and close the IDX cover.
- Insert quarters to the IDX and check if the quarter acceptance has been erased from the IDX.

### A. Programming the IDX to Accept Currency

The Canadian Wash Select II comes programmed to accept and dispense the Canadian \$1 dollar coin and quarter. If your unit needs to be reprogrammed for any reason, use the following procedures.

To program the IDX acceptor, you will need to have six of each of the coins that you are trying to program (coins or tokens).

#### 1. If you are accepting old style \$1 coins:

1. Remove the front cover by pushing in and up at the bottom right corner of the main body of the unit (near the phone number printed on the cover).
2. Find the rotary-switch and set it to the position labeled number 5.
3. Press the reset button immediately to the left of the rotary switch once.
4. Drop the six different old style dollar coins through the acceptor. The IDX will blink once after each coin. Verify that the light (LED) blinks 5 times after the last coin is entered.
5. Replace the rotary switch back to zero.

#### 2. If you are accepting new style \$1 coins:

1. Remove the front cover by pushing in and up at the bottom right corner of the main body of the unit (near the phone number printed on the cover).
2. Find the rotary-switch and set it to the position labeled number 4.
3. Press the reset button immediately to the left of the rotary switch once.
4. Drop the six different new style dollar coins through the acceptor. The IDX will blink once after each coin. Verify that the light (LED) blinks 5 times after the last coin is entered.
5. Replace the rotary switch back to zero.

### 3. If you are accepting quarters:

1. Remove the front cover by pushing in and up at the bottom right corner of the main body of the unit (near the phone number printed on the cover).
2. Find the rotary-switch and set it to the position labeled number 6.
3. Press the button immediately to the left of the rotary switch once.
4. Drop the 6 quarters through the acceptor. The IDX will blink once after each coin. Verify that the light (LED) blinks 5 times after the last coin is entered.
5. Replace the rotary switch back to zero.

### 4. If you are accepting old \$2 coins:

1. Remove the front cover by pushing in and up at the bottom right corner of the main body of the unit (near the phone number printed on the cover).
2. Find the rotary-switch and set it to the position labeled number 3.
3. Press the button immediately to the left of the rotary switch **eight** times.
4. Drop the six different new style 2 dollar coins through the acceptor. The IDX will blink once after each coin. Verify that the light (LED) blinks 5 times after the last coin is entered.
5. Replace the rotary switch back to zero.

### 5. If you are accepting new \$2 coins:

1. Remove the front cover by pushing in and up at the bottom right corner of the main body of the unit (near the phone number printed on the cover).
2. Find the rotary-switch and set it to the position labeled number 2.
3. Press the button immediately to the left of the rotary switch **eight** times.
4. Drop the six different new style 2 dollar coins through the acceptor. The IDX will blink once after each coin. Verify that the light (LED) blinks 5 times after the last coin is entered.
5. Replace the rotary switch back to zero.

### 6. If you are accepting site-specific tokens:

See Token Setup above for more information.

1. Find the rotary-switch and set it to the position labeled number 1, 2 or 3.
2. Press the button immediately to the left of the rotary switch once (or more for a different number of pulses).
3. Drop the six sample tokens through the acceptor, and verify that the light (LED) blinks multiple times after the last coin is entered.
4. Reset the rotary switch to 0 and replace the front cover.

Assume your token value is set for a \$1. To program the IDX to accept two different types of tokens, token 1 for \$1 and token 2 for \$2, proceed as follows:

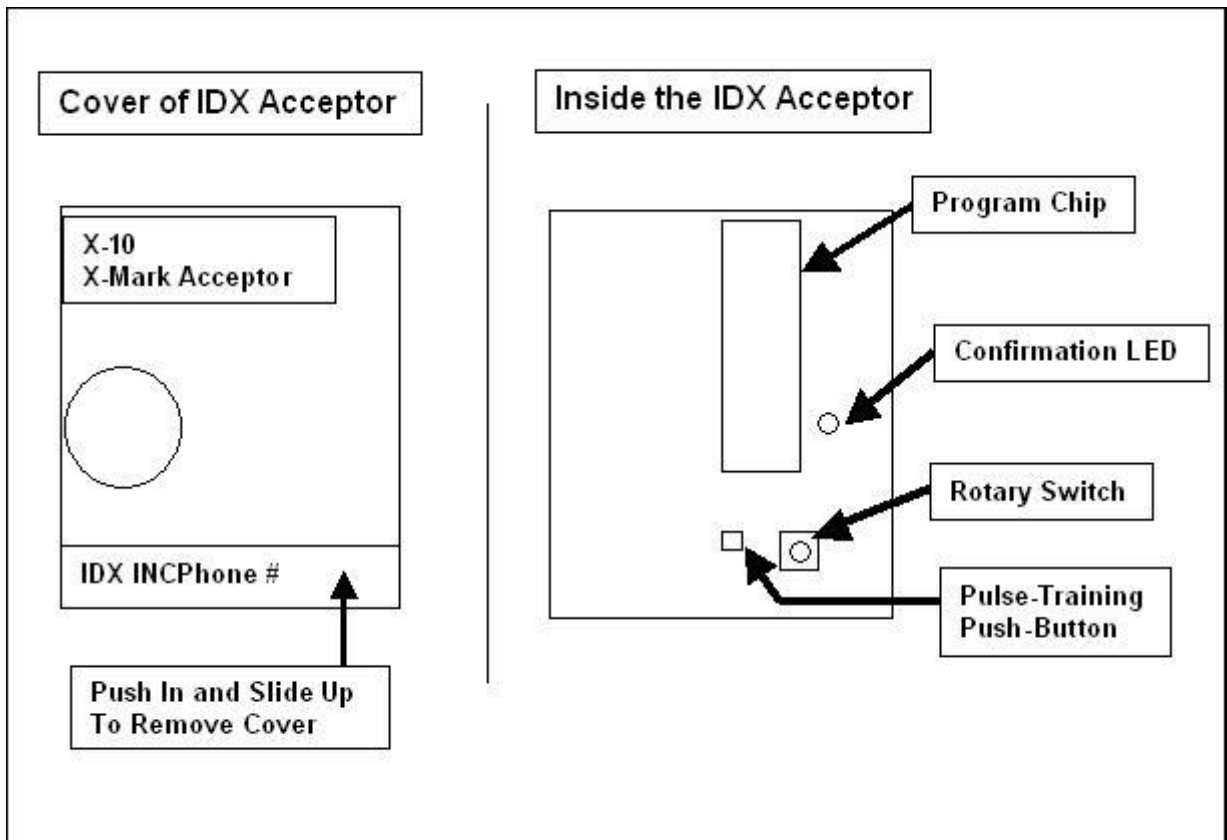
1. Set the rotary switch to position 1

2. Press the button to the immediate left once
3. Drop the six sample tokens and note that the LED blinks multiple times after the last token
4. Set the rotary switch to position 2
5. Press the button twice (for 2 pulses or \$2)
6. Drop the six sample tokens of the second type, and note that the LED blinks multiple times after the last token
7. Replace the rotary switch to 0
8. Replace the cover

Refer to the following table for your token information.

**Table 18. Wash Select II Token Values**

Name	Default Setting	Maximum Allowed
Token Value	\$1.00	\$99.00
Maximum Tokens per Transaction	80	80



**Figure 19. Outside/Inside of IDX Coin Acceptor**

NOTE: The IDX coin-acceptor can be programmed to divert either the \$1 coin or a quarter. The diverted coin needs to be programmed to be on pin 6 of the IDX always.

The table below lists the programming structure.

**Table 19. Canadian IDX Program Configuration**

IDX Rotary Switch Position	Old Style with \$1 coin Diverted	New Style with \$1 Coin Diverted	Number of Output Pulses	
			Old Style \$1 coin diverted	New Style \$1 Coin Diverted
1	Token 1	Token 1	1-12, 14-255	
2	Token 2	\$2 Coin	1-255	8 on Coin 2
3	Token 3	\$2 Coin	1-255	8 on Coin 2
4	\$2 coin	\$1 coin	8	1 on Coin 1
5	Quarters	\$1 Coin	1	1 on Coin 1
6	\$1 Coin	Quarters	1	1 on Coin 2

**CREDIT SETUP**

If you have the credit option, you need to decide whether you would like to do batch closing and opening manually or automatically. Manual batch opening and closing gives you the option of closing and opening batches at your own convenience, while in auto batch opening and closing, the machine does it all automatically. In auto mode, batch closing/opening happens once every 24 hours- at 11pm every night. If you shut your machine down before 11 pm every night, the batch closing/opening happens the next morning when you turn the machine back on again. If, on the other hand, you don't turn the machine off, but use either the WIU or Fault inputs to pronounce "The carwash is out of service" condition overnight, machine will close/open batches regardless at 11pm.

If you want to do batch opening/closing manually, do the following.

1. Go to the setup menu, by turning the setup/operate switch to setup.
2. Go to "Misc. setup" main menu.
3. Select the "system time" sub menu and set the time to your current standard time.
4. Then go to the "credit systems" main menu.
5. Go to the "credit systems" main menu in setup mode.
6. Select "open batch"; batch should open. If batch opens, skip to step 8 below.
7. If batch doesn't open, cycle power to the entry stand, and try to repeat the batch opening process.

8. If you are still having problems, check if the modem is powered. Also check if the modem cable is well connected. And repeat the process.
9. If you are still having problems, go to the Diagnostics main menu, and choose “test modem” command. If the modem responds with an OK message, try to open a batch again.
10. If you are unable to do so at this point, then you might have a modem with the wrong programming. If you have the printer option, then go the “credit systems” menu, and choose “print trans hist” command. Check the printout to see the reason of the failure.
11. If you have any clues from the printout, proceed to open the batch after solving the problems.
12. If you are still experiencing problems, modem might be bad.
13. Now go to PROCESSOR TYPE in credit menu; select 1 for Terminal mode. You will then be asked to choose between manual or automatic batch opening and closing options; choose manual.
14. When it is time for you to close a batch (which must be after some transactions by your customers), go to setup mode. From the setup mode, select “credit systems”. Then choose “close batch”. Batch should close.
15. After closing a batch, you should open another batch for your next business cycle.

If you want to do batch opening/closing automatically, do the following.

1. Go to the setup menu, by turning the setup/operate switch to setup.
2. Go to “Misc. setup” main menu.
3. Select the “system time” sub menu and set the time to the current standard time.
4. From the setup menu, go to the “Credit systems” main menu.
5. Select “processor type” and set it to 1. At this point you will be asked to choose either manual batch opening and closing or automatic batch opening and closing. You must select Automatic.
6. Go to the “open batch” command under “Credit systems”.
7. Batch should open. If so, skip to step 14.
8. If batch doesn’t open, cycle power to the entry stand, and try to repeat the batch opening process.
9. If you are still having problems, check if the modem is powered. Also check if the modem cable is well connected. And repeat the process.
10. If you are still having problems, go to the Diagnostics main menu, and choose “test modem” command. If the modem responds with an OK message, try to open a batch again.
11. If you are unable to do so at this point, then you might have a modem with the wrong programming. If you have the printer option, then go the “credit systems” menu, and choose “print trans hist” command. Check the printout to see the reason of the failure.



12. If you have any clues from the printout, proceed to open the batch after solving the problems.
13. If you are still experiencing problems, modem might be bad. Contact Unitec.
14. You are now ready to do business via credit. You can return the unit back to operate mode via the setup/operate switch.
15. If you, for any reason, change your mind to resort to manual batch opening/closing, all you have to do is repeat step 5 above- this time, set "processor type" to zero. And do the section "If you want to do batch opening/closing manually" above.

## **B. CashCode Bill Validator**

The Canadian Wash Select II comes equipped with the CashCode bill validator.

### **1. Emptying the Bill Stacker**

The CashCode bill stacker will hold up to 400 bills and is equipped with a keyed-entry vault.

To empty the bill stacker, squeeze the release levers located on both sides of the bill stacker while pulling it back. Lift the bill stacker up and back to remove it from the bill validator. You will need a key (included with the CashCode bill validator) to open the stacker and remove the bills.

### **2. Replacing the Stacker**

To replace the bill stacker, slide the base of the stacker into the mount guides. Press the stacker forward until it snaps into place.

### **3. Flash Codes\***

The diagnostic LED on the CashCode bill validator is located on the front of the unit. If it is lit, it indicates there is a problem. If the red light on the front of the bill validator is ON insert bill and remove it after the red light goes OFF. Count the number of flashes and compare with the diagnostic chart below.

**Table 20. CashCode Bill Validator Diagnostic Flash Codes**

#	Description	#	Description
1	Cassette is removed from bill validator	7	Failure of magnetic sensors
2	Stacking motor does not rotate	8	Transport motor does not move

\*Taken from the CashCode® Model AMZ-USA-MDB-UNV User's Guide

#	Description	#	Description
3	Cassette is full	9	Speed of transport motor is too high
4	Mechanical jam in the cassette	10	Transport motor electrical overload
5	Stacking motor electrical overload	11	Bill pathway security latch is open
6	Failure of optical sensors	12	Banknote is in the entry slot of the cassette and credit is not issued

#### 4. Removing the CashCode from the Wash Select II

Follow the steps below to remove the bill validator.

6. Hold the Bill Validator at the top.
7. Remove the two Phillips head screws on the left side of the Bill Validator faceplate.
8. Remove the two Phillips head screws from the bottom of the Bill Validator faceplate. (Be careful not to yank, tear, or rip out the wires connected to the Bill Validator).
9. Once the wires on the right side of the Bill Validator are in view, grasp them at the connector and disconnect them by gently rocking them back and forth.


#### 5. Cleaning and General Maintenance

To clean the CashCode bill validator, first remove it from the Wash Select II using the above procedure. Next, turn the validator face down. Push the button labeled "PUSH." When you do, the lower housing will open and reveal the sensors. Use an alcohol swab to clean the heads and remove any visible debris. Fold up the bottom part of the lower housing. Press the top part of the housing cover down until it latches shut.

#### 6. Programming the CashCode Validator

The CashCode bill validator is programmed using the DIP switches located on the controller board. To access these switches, remove the controller board cover plate by following the instructions on the label. When you have located the DIP switches, refer to the following image for the appropriate settings.

**Table 21. CashCode DIP Switch Settings\***


US5B	1	2	3	4	5	6	7	8	SWITCHES
ON  OFF	1P/\$1	ENABLE					ON	ON	HII
	4P/\$1	\$1	\$2	\$5	\$10	\$20	ON	OFF	SP Fast
		DISABLE					OFF	ON	SP Slow
							OFF	OFF	MDB

\* Taken from the CashCode® Model AMZ-USA-MDB-UNV User's Guide

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## Appendix E. Single Gate Installation (Without Gate Controller)

The Barrier Gate option allows you to place a gate in front of the Wash Select II unit to control the flow of traffic into your car wash. A Gate Controller is not required when the site uses a single Wash Select II and a single barrier gate to control access to the tunnel wash.

	<p><b>Note:</b> If the site is using multiple Wash Select IIs and multiple barrier gates to control access to the same tunnel wash, you will require the Gate Controller. Refer to the <i>Unitec Gate Controller for Multi-Lane Applications Install Guide</i> for installation procedures for sites using the Gate Controller.</p>
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The Gate installation process consists of installing the conduit runs, cutting in the gate loop, mounting the gate, and then wiring the gate and the Wash Select II.

### C. Site Preparation

The following figure illustrates a sample site layout.

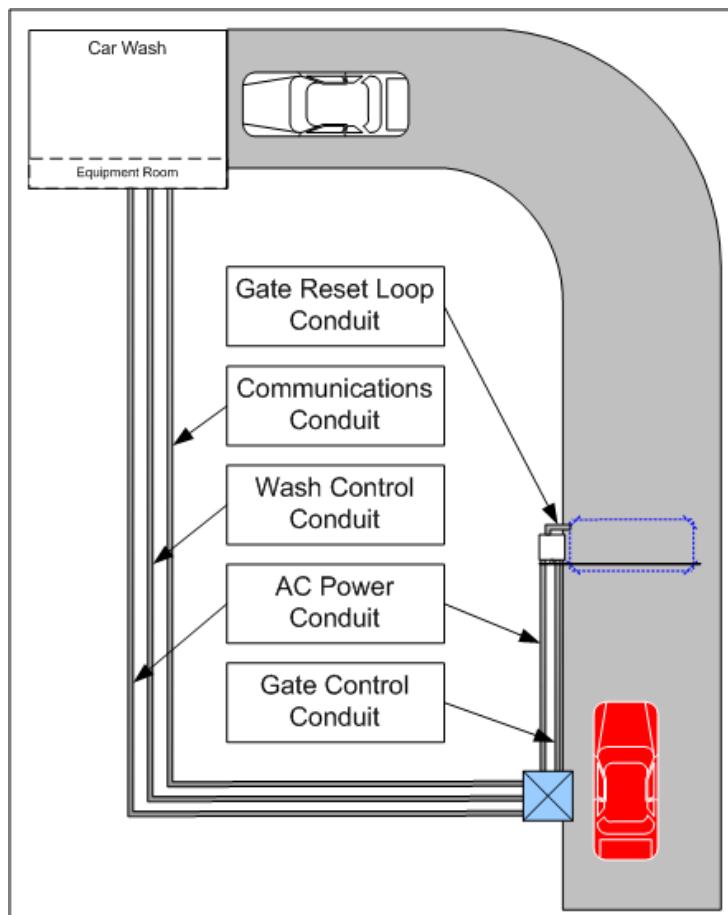


Figure 20. Sample Site Layout

## 1. Electrical Planning

In addition to the standard three conduits carrying wash signal wiring, communications wiring, and AC power wiring, you will need the following:

- A conduit between the Wash Select II and the barrier gate to carry 115-120VAC wiring.
- A conduit between the barrier gate and the Wash Select II unit to carry signal wiring.
- A short conduit between the gate reset loop and the gate.
- You will need a thin tipped, flat head screwdriver to open and tighten the relay connections of the Phoenix connector.
- Locate phoenix connectors J18 and J19 on the CPU board inside the Wash Select II. Remove those connectors to attach wires on the Wash Select II side and then replace them when the wiring is complete.
- See the installation documentation that comes with the gate for details on wiring the 120 VAC power to the gate.

The Gate requires 115-120 VAC on a 5-Amp dedicated breaker, which should be provided during wash construction. Most installers will have power supplied directly from one of the three phases used to power the wash motors and controllers. If this method is used, special attention should be given to proper grounding at the unit, as well as in the breaker panel.



**Warning:**

The AC Power conduit must be positioned a minimum of 12" away from the Gate Loop to prevent electromagnetic interference.

The barrier gate control signal wires should be a minimum of 18awg. You will need to pull 4 control wires from the barrier gate to the Wash Select II. These wires can be run in the same conduit. Plan your conduit runs so that the barrier gate control signal wiring and the Gate Loop wiring come up through the bottom of the base of the Gate.

## 2. Mechanical Planning

Position the gate so that the gate arm is 10'-12' from the Wash Select II centerline in line with the Wash Select II unit.

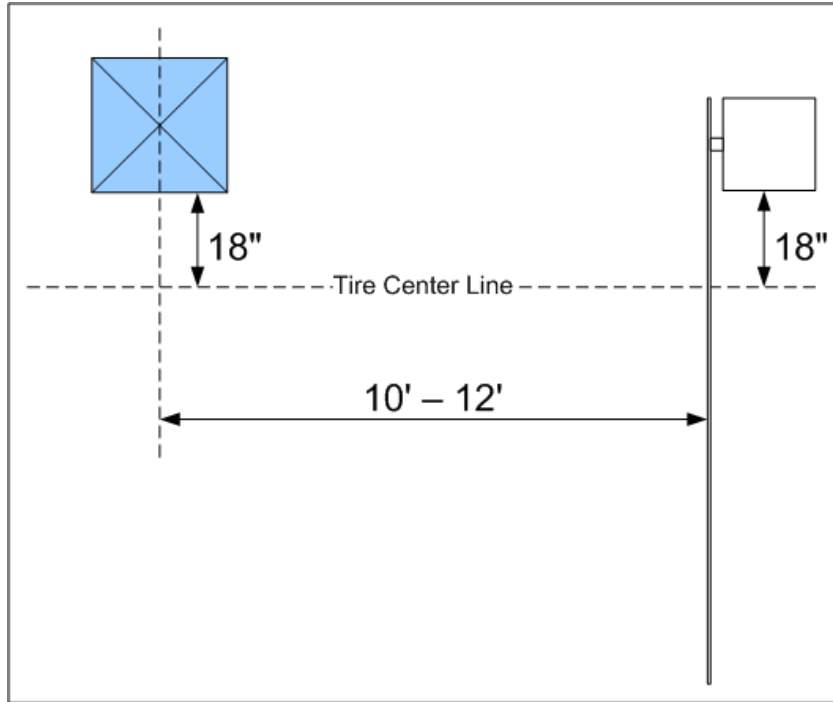


Figure 21. Gate Position

### 3. Mechanical Installation

You will be installing the gate directly into the concrete slab. Mark the position of the gate for conduit reference (see gate installation documentation), and then cut the gate loops appropriately. You will need to run a conduit from the loop to the gate to hold the gate loop leads. Conduit should be PVC only.

#### a) Gate Reset Loop

Each gate requires one gate reset loop. The gate reset loop should be 6' long by 2.5' wide. The loop should be positioned so that the edge closest to the approaching car extends 2.5" beyond the forward edge of the gate arm. The loop should be positioned at least 7.5" away from the gate as shown in the following figure.

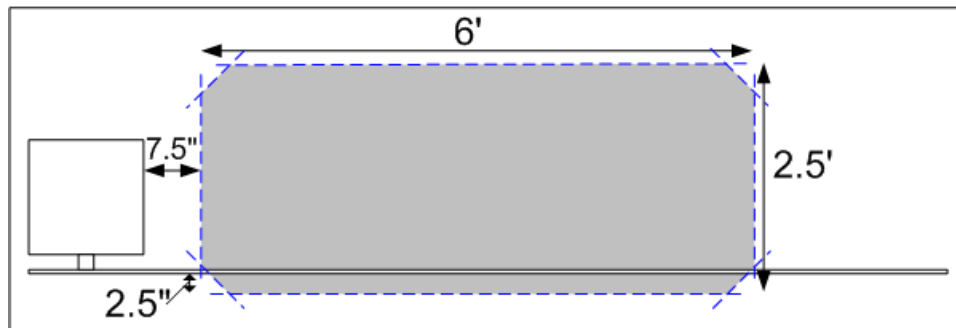


Figure 22. Gate Reset Loop Dimensions

With the dimensions as specified above, you will need to loop the wire 5 times around the loop.

Cut the loop according to the guidelines provided in the installation documentation that comes with the gate.

### b) Installing the Gate

The holes in the base of the gate are 3/4" in diameter. The mounting bolts must be 3/8" in diameter.

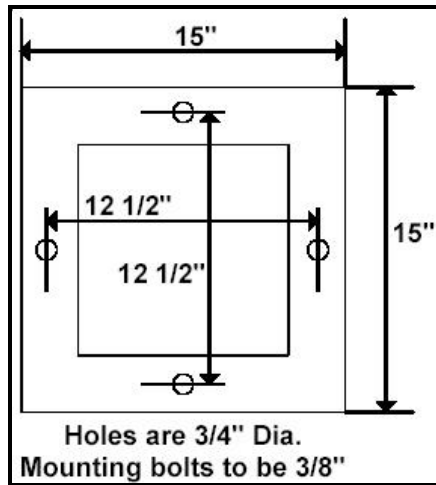


Figure 23. Gate Base Bolt Positioning

## 4. Electrical Installation

Make sure all power is disconnected from the gate and Wash Select II prior to beginning this procedure.

### a) Wire the Wash Select II Unit

1. Connect one signal wire to pin 1, and one signal wire to pin 2 of phoenix connector J18.
2. Connect one signal wire to pin 1, and one signal wire to pin 2 of phoenix connector J19.
3. Replace the phoenix connectors.

### b) Wire the Gate

1. Connect the signal wire from J18, pin 1 to terminal 50 inside the gate.
2. Connect the signal wire from J18, pin 2 to terminal 1 inside the gate.
3. Connect the signal wire from J19, pin 1 to terminal 42 inside the gate.
4. Connect the signal wire from J19, pin 2 to terminal 52 inside the gate.
5. Jump terminal 48 to terminal 22 inside the gate.

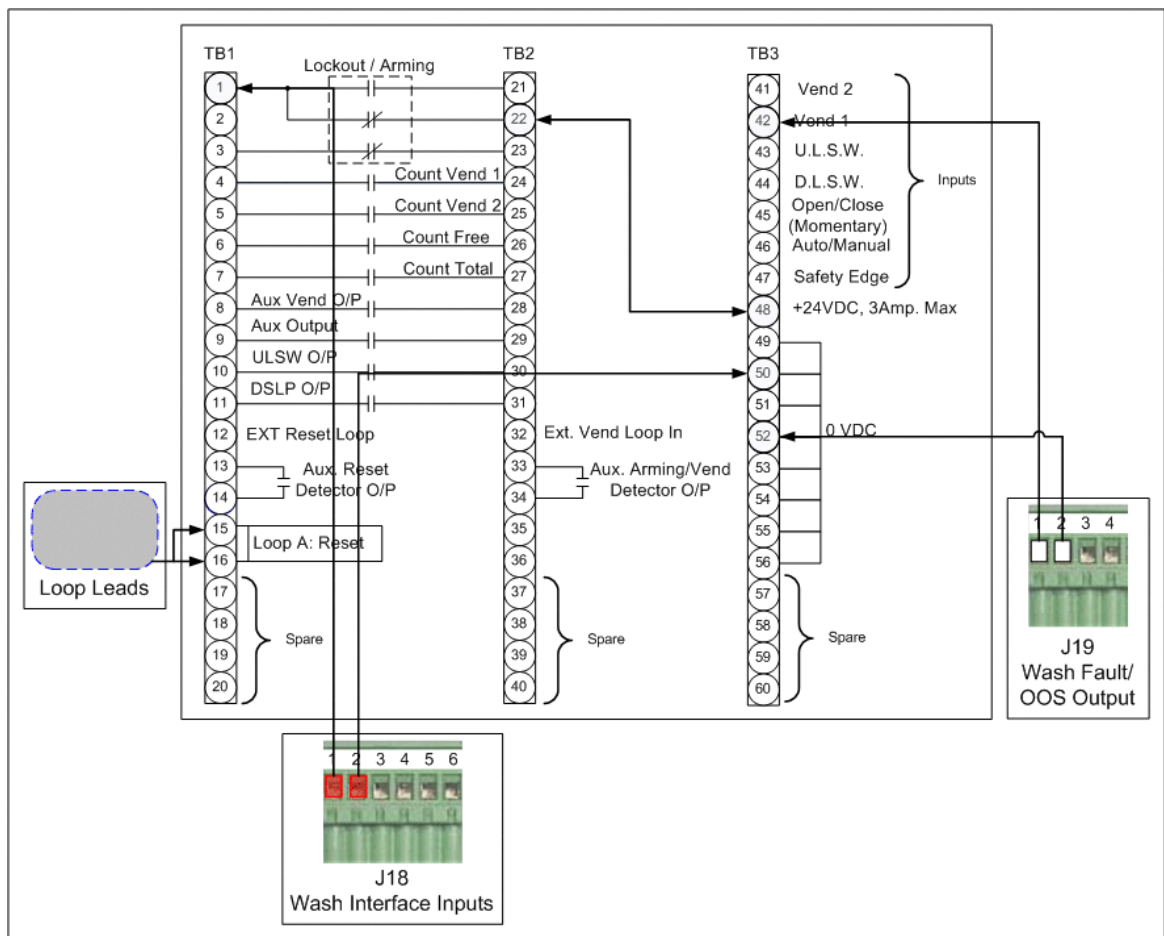


6. Connect the gate reset loop leads to terminals 15 and 16 inside the gate.

Refer to the following table when wiring the Wash Select II unit to the barrier gate.

Wash Select II Phoenix Connector Pin	Gate Terminal
J18, pin 1	50
J18, pin 2	1
J19, pin 1	42
J19, Pin 2	52
N/A	48→22

The following diagram illustrates the proper wiring at the gate:



**Figure 24. Gate Wiring**